A new emerging rural world. An overview of rural change in Africa, Atlas for the Nepad Rural Futures programme

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Rural Futures Programme
TRANSFORMING AFRICA

NEPAD Planning and Coordinating Agency
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A NEW EMERGING RURAL WORLD

AN OVERVIEW OF RURAL CHANGE IN AFRICA

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FOREWORD

As we celebrate 50 years of existence of the OAU/the African Union, it is pleasing to note that several African countries have experienced high economic growth in recent years. However, this growth has not been accompanied by a comparable reduction in poverty, as it has not created enough decent jobs or a reduction in inequality. African countries therefore face the challenge of promoting broad-based and sustainable growth that leads to employment generation, poverty eradication and the reduction in inequality, especially in rural areas – where the vast majority of the poor live in relative isolation and deprived of investments and social safety nets.

The challenge of translating overall economic growth into structural transformation that leads to a reduction in the persistent inequalities between rural regions and the cities - as well as between and within rural regions - that creates conditions where rural populations can better contribute to and be recognized for their contribution to national development and environmental sustainability remains great.

The NEPAD Rural Futures Programme overarching purpose is to facilitate new thinking and broad agreement on Africa's development pathway/s based on statistics on critical indicators of structural transformation.This atlas presents the main characteristics of rural Africa by depicting, in the form of maps and graphs, indicators that will allow us to monitor our progress in the areas of rural development and transformation. It addresses the issue in two ways:

- on the one hand, by a clear illustration of the factors of transformation such as demographics, urbanisation, densification and polarisation of populations in certain areas of attraction, such as the Gulf of Guinea.
- more importantly, this atlas illustrates the specific dynamics of Africa, which indicate that the rural space is beginning to reconstruct itself as a result of the growing linkages between urban and rural areas and of the relationship between city dwellers and their tie to their former countryside. This proximity clearly creates opportunities for diversification, trade and small businesses, which are catalysts of economic transformation that could be unique in Africa.

It also clearly shows that we have challenges to overcome, such as agricultural development that is not as inclusive as it should be. It shows the need to build social and economic capital, simultaneously using a multi-sectoral approach. It addresses the complex interweaving of issues -structural, human, economic, environmental and political- which we, as decision-makers, do not sufficiently take into account.

This atlas should serve as a reference that fuels our debates in Africa on issues of territorial development and structural transformation, as well as inform national development processes. It will be regularly updated to monitor the progress that we make on the rural transformation agenda of the continent.

Dr Ibrahim Assane Mayaki

Chief Executive Officer, the NEPAD Agency

Former Prime Minister of Niger

Table of contents

List of maps and figures

MAPS

FIGURES

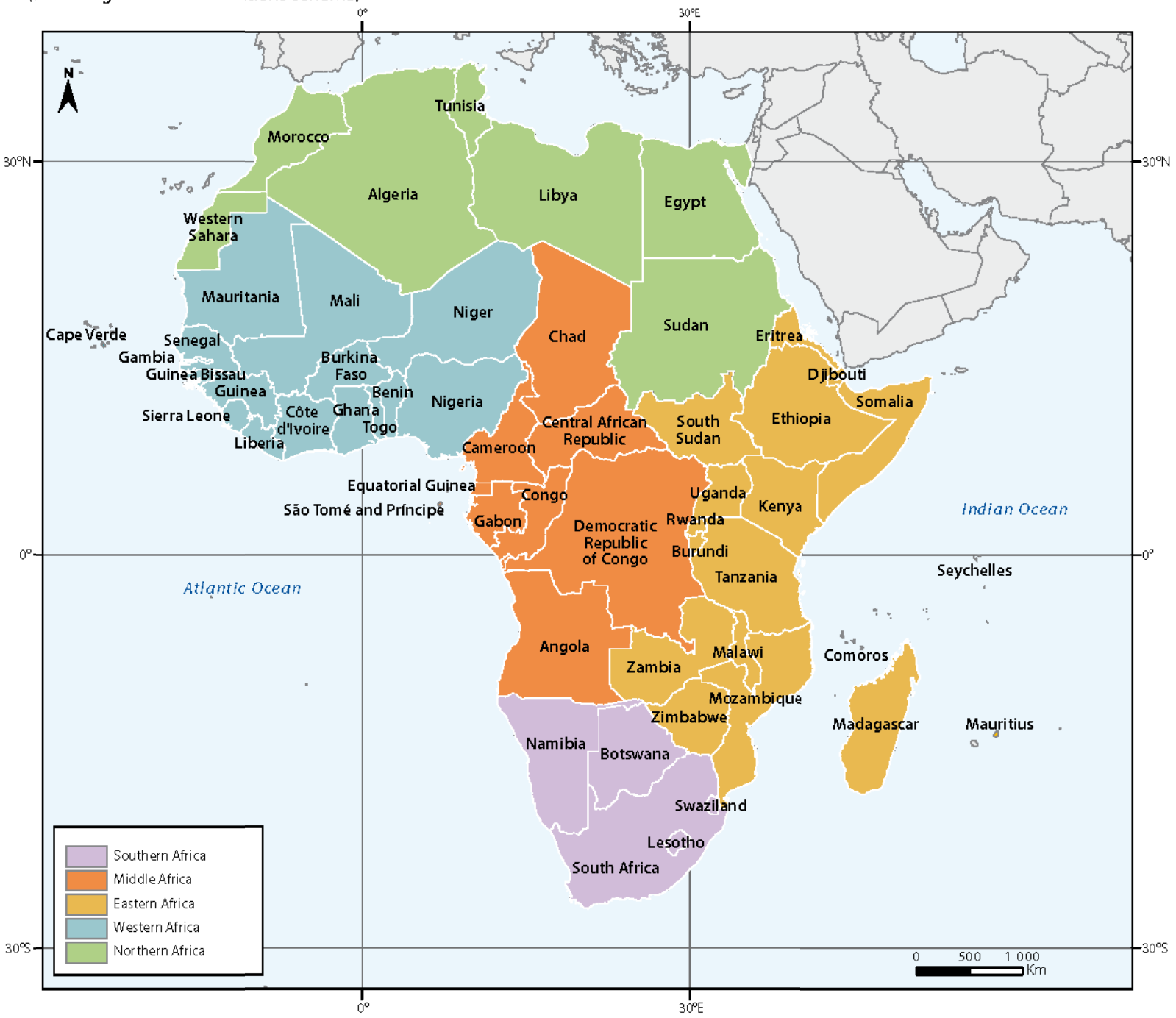
1

INTRODUCTION

Towards a new rural-urban model: decompartmentalising territories and policies

Bruno Losch
Géraud Magrin

M1. The African States by major region
(according to the United Nations scheme)



Bruno Losch
Géraud Magrin

Towards a new rural-urban model: decompartmentalising territories and policies

Addressing urban areas in the introduction to a work focusing on rural issues may seem paradoxical. But rural Africa is no longer the one we think we know. Its rapid transformations reflect the effects of the vigorous population and urban growth in the continent as well as the characteristics of its integration into the world economic system. Yet dominant visions explain why we still conceive of a possible future for Africa in terms of past urban and rural categories, when these no longer correspond to the day-to-day realities of the people of the continent.

• Current policies are excessively compartmentalised

The emergence of new territorial dynamics in Africa, generated by population growth and city expansion, is the greatest change of the last few decades. These new territories are a result of the densification of road networks and the development of rural centres and small towns, stimulated by trade in their hinterland. They are also the product of the practices of local people: economic operators, men and women, with an active system of traders, transporters and craft workers, implementing strategies that straddle the boundaries between urban and rural; and households' livelihoods that are diversifying the content and locations of their activities, taking full advantage of the development of rural radio stations, progress in electrification, the proliferation of lower cost public or individual transport and, above all, the mobile phone revolution, which was adopted in rural Africa at about the same time as in the rest of the world. These changes – which should not overshadow the fact that many parts of Africa are still made up of remote villages where the isolation reinforces extreme rural poverty – reduce travel time, progressively build convergence between rural and urban, and contribute to the concrete invention of new territorial configurations.

These developments have generally escaped public policies, because of the statistical segmentation of rural and urban areas, whose unstable definition makes it difficult to get a clear picture of the reality. But also because of the fragmentation of policies themselves, which by abandoning several decades ago the creation of development strategies based on medium and long-term visions in favour of short-term management, has resulted in a juxtaposition of sectoral approaches and – often – in public action shifting away from any territorial perspective.

• The challenges of a simultaneous demographic and economic transition

It is unlikely that sectoral policies, however sophisticated, will be able to meet the many challenges facing the continent, unless they are rearticulated and integrated into a global vision. Although Africa has already experienced some spectacular changes, its population dynamics are increasing the pace of this transformation, which raises questions of an unprecedented nature and scale in comparison with pathways of change in other parts of the world.

Standing at a billion people in 2010 compared to 100 million in the early 20th century, the population of the continent will double again by 2050. Due to the current characteristics of its population distribution, this demographic surge will concern both urban and rural areas, the latter remaining statistically predominant until the 2030s. This growth means territorial densification (with growing densities), pressure on the environment and resources, and considerable challenges in terms of city management that will be accentuated by a "metropolitan bias", which favours large urban concentrations.

This dramatic increase in the African population is an asset for the continent, which has been seriously hampered by its under-population. But while this demographic transition – the last in the world – is unprecedented in its rapidity and scale, it is also unusual in that it is disconnected from any endogenous economic accumulation process.

The transformation of the African economies is extremely slow: agriculture is still the cornerstone of activity for a population that is predominantly rural; urbanisation has taken place without industrialisation, and is primarily based on an informal sector that makes it difficult to finance the necessary infrastructure; and above all, this situation has evolved without any apparent change in the way the continent is integrating into globalisation. Africa remains a region that exports a limited range of raw materials, and imports manufactured goods, a position that has hitherto proved to be a source of vulnerability and an obstacle to development. Only a handful of countries located at the northern and southern extremes of the continent have so far proved an exception to this rule, with more diversified, wealthier economies supported by urbanisation with high economic density.

Recent changes in Africa's external relations do not, however, seem favourable to a veritable economic transition. Export agriculture, after having borne the bulk of development strategies at the time of independence, suffered a long decline. It is now maintaining its market share and has had some recent success, albeit limited geographically. For a long time it also overshadowed the potential of food crops destined for the intra-African market, whose growth thus far has fortunately largely succeeded in keeping pace with that of the population. But for how long?

Above all, since the late 1990s we have seen the boom of the extractive sector (mining, oil), in response to demand from a global market driven by raw material requirements for growth in the major emerging countries. Exports of mineral resources have increased in many countries, and will grow even further with the exploitation of new deposits. The monetary value of these resources has already relegated agriculture to the smallest share of the major national economic aggregates. But these rentier activities produce few jobs and generally have ambivalent

consequences: they certainly create growth in absolute terms, but this growth is not inclusive and does not provide any spillover effects for the majority of the population. It is more likely to stimulate urbanisation through investment of income in buildings and public works and often results in agriculture being neglected in favour of the apparently easier path of food models based on imported products.

• What employment alternatives for young people?

One of the major challenges facing the continent is, however, that of employment. Because of their population structure, the African economies will continue to receive a growing number of young jobseekers every year. These new workers, who numbered around 15 million in 1995, now stand at 20 million and will reach almost 30 million in 2030. Two thirds of them will be from rural areas. This expansion of the economically active population is an opportunity for a region that, because of the rapidity of its demographic transition, has had to support the highest proportion of inactive people ever seen, at the worst possible moment, the height of the crisis of 1980-1990. It constitutes an exceptional driver of economic growth, as long as the economy can provide these jobs. This is a key challenge for development policies.

Industry and modern services currently only provide a very small proportion of urban employment. Migration opportunities are increasingly limited in the centres of globalisation that were historically the most open, such as the mature economies of North America and Europe. And the emerging countries are unwilling to welcome a large number of African immigrants in the near future. Consequently, the radically changing rural Africa will therefore have a key role to play in the forthcoming adaptations and will need to provide as many agricultural and non-agricultural jobs as possible.

• Reinvesting in territorial development strategies

Meeting this challenge will involve putting public policies back into a territorial perspective. Beyond the need to develop regional integration leveraged by major infrastructures – which in the long term will also help to open up economic areas and to enhance domestic trade –, it is a proactive approach to territorial development that will produce the initiatives and innovations needed to boost economic and social development. This proactive approach means consolidating urban-rural linkages, and providing the network of medium-sized cities with the urban functions needed to foster local dynamics and to facilitate their connection to metropolitan areas. Agriculture will have to play its role, taking advantage of the potential of the African domestic market and of external opportunities, since growth in agricultural income will reinforce rural demand that drives economic diversification at the regional level.

Encouraging an increase in agricultural production and income while maintaining the multifunctionality of rural activities to guarantee resilience in the face of climate variability, preserving and protecting environmental capital and biodiversity, and supporting the development of non-agricultural jobs, all require creative public policies. These must combine territorial development tools and support for economic sectors, the construction of infrastructure, mediation between actors, and the reinforcement of human capital. Such policies must be consolidated or invented in order to enhance the new rural realities and to make these emerging territorial dynamics the foundations of genuine development paths.

The tragedy of African information systems

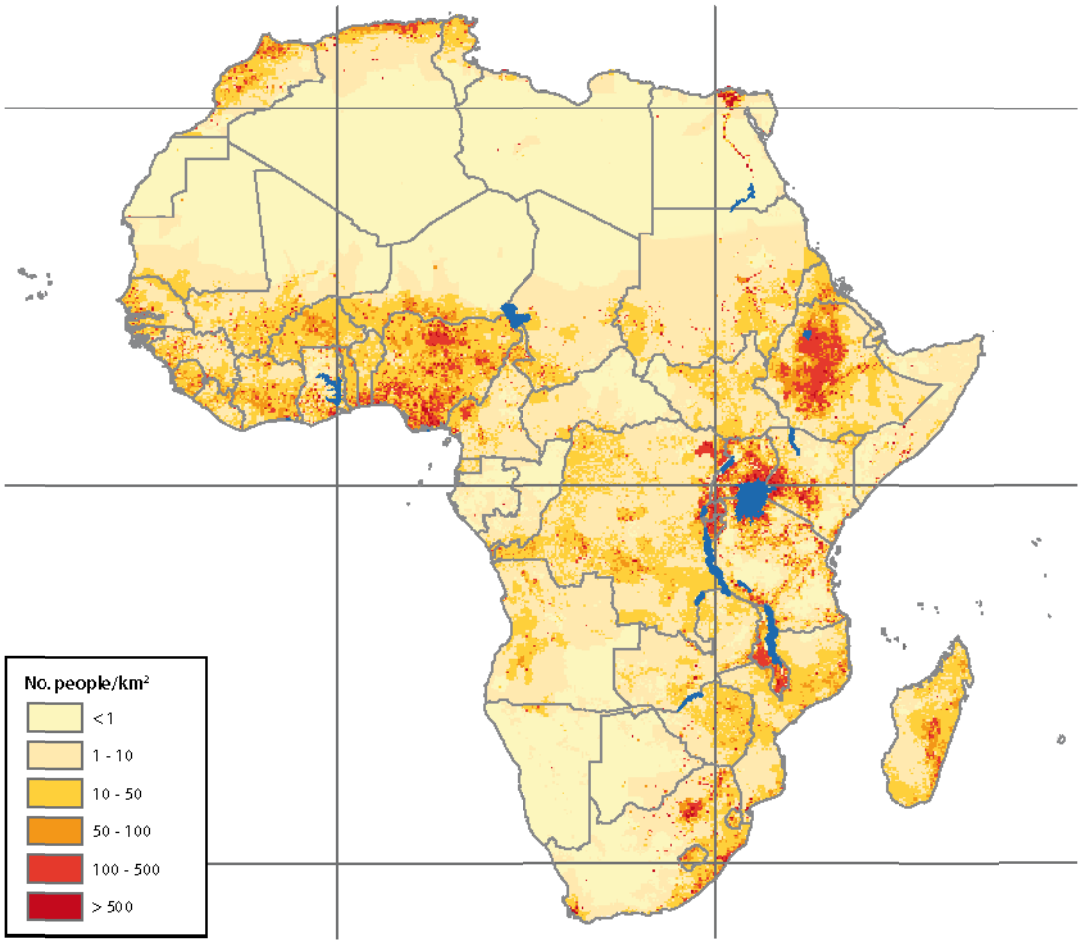
Tragedy is a strong word, but it is increasingly used to describe the state of knowledge bases and statistical systems. There are several exceptions, and progress has been made recently in some countries, particularly thanks to international cooperation. But on the whole, the existing information systems no longer help to guide public action. A "politics of large numbers", in the words of Alain Desrosières, is nevertheless a necessity in order to acquire the tools for knowledge and government.

The challenges to be met and the numerous conflicts on the use of resources should make the reconstruction and development of these information systems a priority. It is particularly important to enhance knowledge and understanding of the reality of rural economies, the new territorial dynamics and the specifics of land occupation. How can the anticipated increasing densities all over the continent be managed without an accurate understanding of its "full" and "empty" places, its tension zones and its potential?

2 SETTLEMENT, POPULATION, URBANISATION

M2. Population density in 2010

Source: Afripop



M3. Fertility rate (2005-2010 average)

Source: WPP 2010

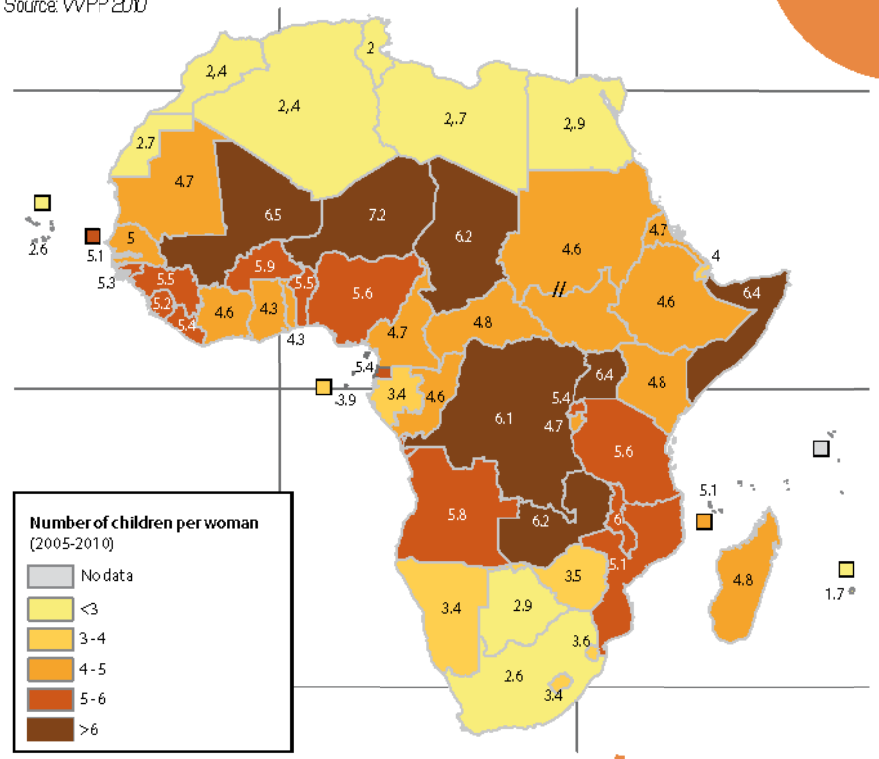
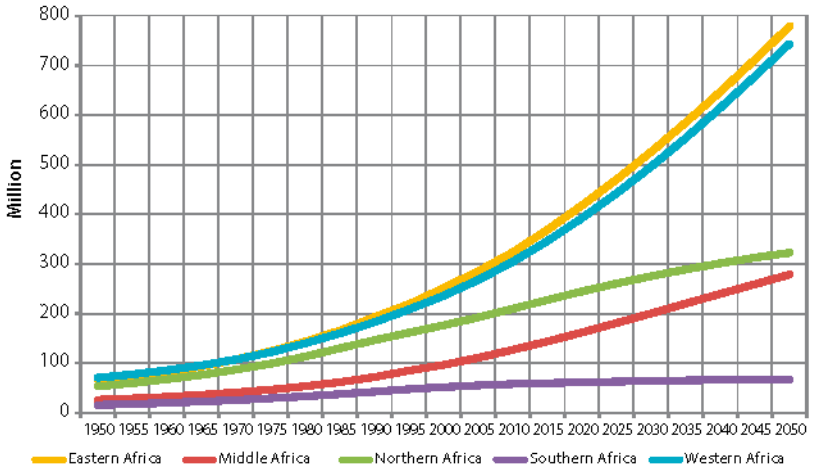


Fig. 1. Population growth by major region (1950-2050)

Source: WPP 2010



Bruno Losch

The last world demographic transition

Africa is a vast continent with an unevenly distributed population that has been growing considerably over the last 50 years, gradually correcting its population deficit. This growth dynamic produces greater potential for activity, which will need to be consolidated by the implementation of appropriate development policies.

• The African population boom

With slightly more than one billion people in 2010, Africa is the second most populated continent in the world (15% of the world population), but is far behind Asia (60%). For a long time it was underpopulated, and has experienced a late demographic transition (death rates and then birth rates falling over time), which was thus all the more spectacular, with annual growth rates reaching more than 4% (a doubling of the population in less than 20 years) in many countries.

This growth, which reached a continental average of close to 3% in the early 1980s, remains high (2.3% in 2010); according to United Nations projections (medium variant), it will continue for several decades, albeit at a slower pace. This is explained by the inertia linked to the young population, but also by the dynamics specific to sub-Saharan Africa, which is characterised by permanently high fertility rates, with a regional average of 4.6 children per woman, and as many as 7.2 children per woman in Niger, the highest rate in the world.

As a result, the population of the continent will grow by 1.2 billion people by 2050 and, at this time, Africa will have 2.1 billion inhabitants and almost 25% of the world population, compared to 55% for Asia. In less than a century, it will have reversed its demographic weight in relation to Europe (which accounted for 22% of the world total in 1950, compared to 10% for Africa). Above all, the population of the continent will continue to grow after 2100: it is the only part of the world where this is the case, along with North America, but the numbers bear no comparison (3.6 billion people projected by 2100 in Africa compared to 500 million for North America).

• Highly uneven population distribution and marked regional dynamics

Population distribution in Africa is highly uneven and characterised by vast areas that are sparsely populated, or even permanently uninhabited, due to the Sahara, which divides the continent in two, and to other regions that are hostile to human settlement because the insufficient number of people made them impossible to develop, such as the great equatorial forest. For a long time, the morphology of the continent, a legacy of the past, resulted in a concentration of the population in the Mediterranean region, in the highlands, and in the Sudanian and southern African savannahs, before the development of the coastal regions polarised the population, as the continent was progressively integrated into the world economy.

The current population distribution still reveals dense zones in the Great Lakes region, in the highlands of Ethiopia, Madagascar and southern Africa, as well as on the coasts: the Mediterranean, the east coast, and the Gulf of Guinea, where the human settlements linked up with the populated regions of the Sudanese zone (from Nigeria to Burkina Faso).

This uneven population distribution has produced some very different growth dynamics. The least populated area, Southern Africa, reached its growth peak in the 1970s, before beginning a rapid decline, which was accentuated by the AIDS pandemic. North Africa, which was the most populated part of the continent in 1950, along with West Africa, grew considerably until the mid-1980s, before levelling off. It was rapidly overtaken by the west and east of the continent, which experienced a lengthy surge in population lasting almost 40 years that is expected to continue at a slower pace until 2050. With 300 million people today, the two regions will be close to 800 million in 40 years' time. Central Africa, which was long held back by its underpopulation, is rapidly catching up, with the highest rate of growth recorded today. By 2050 it will have almost caught up with North Africa.

• A welcome increase in the active population and its challenges

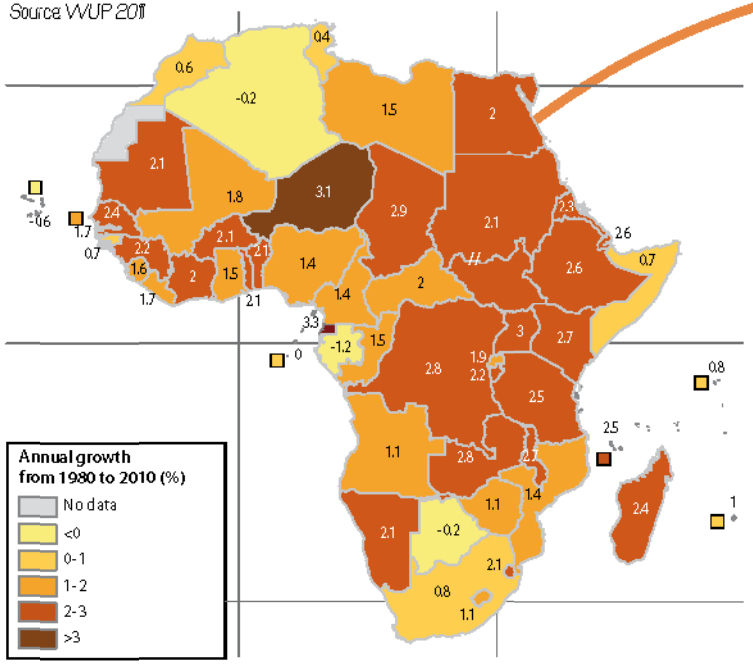
This rapid growth was accompanied by a notable change in the population age structure, which is characteristic of demographic transition. For a long time, the ratio between the economically active population (15 to 64 years) and the inactive population was particularly unfavourable: in sub-Saharan Africa, the activity ratio reached a historical low of one working-age person to one inactive person in the mid-1980s. This burden of inactive people on the economically active population – and on the economy as a whole – came at the worst possible time of the crisis and austerity policies: it seriously hampered the African economies at a time when China, for example, had two working-age people for every inactive person: a considerable advantage that increased in the 2000s (China currently has 2.5 working-age people for every inactive person, while sub-Saharan Africa is struggling to reach 1.2).

The situation in Africa will improve, however, with an increase in the active population that will continue until after 2050, whereas the other parts of the world will all be on a downward path. Africa will therefore reap its "demographic dividend". This will be a powerful engine of growth as long as the economic, institutional and political environment supports job creation.

Indeed, the major challenge for Africa in the coming decades will be to provide jobs for an ever-increasing number of young people – a difficult stage that the North African countries are currently facing – or risk an increase in social and political tension and uncoordinated pressure on natural resources. In sub-Saharan Africa, 17 million young people now enter the job market every year. This figure will reach 25 million in 15 years' time.

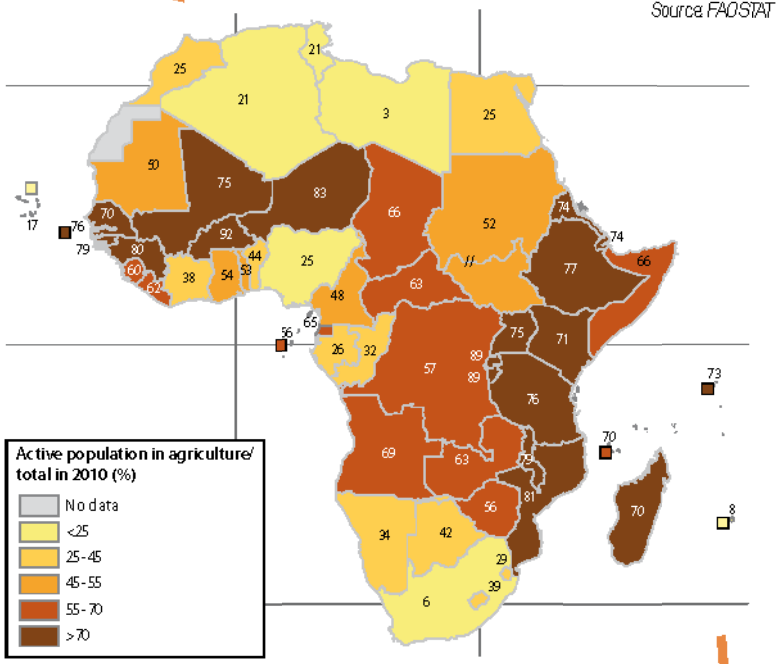
M4. Rural population growth (1980-2010)

Source WUP 2011



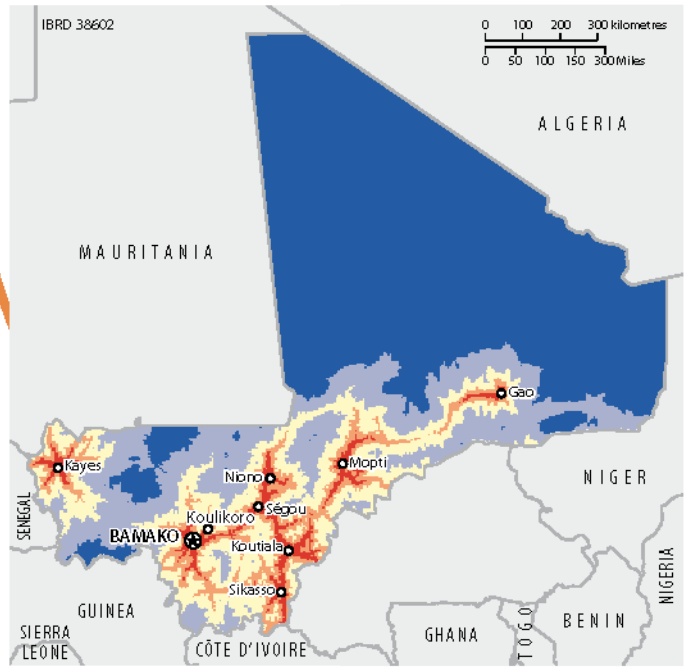
M5. : Size of working population engaged in agriculture

Source FAOSTAT



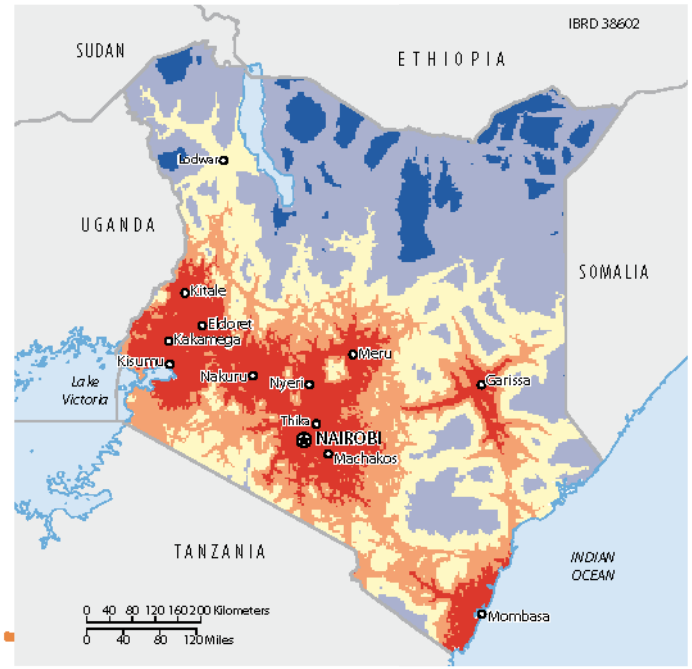
M6. Accessibility to cities of more than 50 000 people (Mali)

Source: Losch et al. 2012



M7. Accessibility to cities of more than 50 000 people (Kenya)

Source: Losch et al. 2012



Bruno Losch

Lasting but changing rural trends

Apart from its northern and southern edges, Africa remains predominantly rural and the number of people living in the countryside will continue to grow well beyond 2050 – a global exception. The densification of the population and improvements in communications are nevertheless producing lifestyle and regional changes. Transforming this new rural context into a factor of development is a major challenge for policy makers.

• Rural people still in the majority

Although the population of the continent varies widely in terms of density, the spatial distribution of the population in the different regions is still marked by the demographic weight of the countryside. With just over 620 million people in 2010, rural areas have experienced high population growth: they had annual growth rates of more than 2% over the last 30 years in 27 countries.

The fact that urbanisation began at a late stage, with the exception of the Mediterranean coastal areas, but also an urban growth rate that has levelled off over the last 20 years, have ensured the continent remains predominantly rural (at two thirds for sub-Saharan Africa in 2010, compared to just under half for North Africa). This will remain the case until at least the mid-2030s. Along with the southern Asian countries, Africa constitutes the largest rural reservoir in the world.

More importantly, sub-Saharan Africa is the only region where the rural population will continue to grow in absolute terms well beyond 2050. With 310 million additional rural people at this time, the rural population of sub-Saharan Africa will increase by 57% over 40 years (it will begin a slight decline in North Africa).

• Changing rural realities

The massive scale of rural Africa should not however mask the extent of the changes that characterise these rural areas. Indeed, densification linked to population growth, the development of urban networks and considerable improvements in transport conditions have resulted in a blending of urban and rural settings, which increasingly questions the relevance of a representation that brings the rural and urban worlds into opposition.

Many parts of Africa are still made up of remote villages. However, in the most populated regions, the multiplication and development of small and medium-sized towns has considerably reduced the time needed to travel to cities. The new accessibility and connectivity between areas may not be as intense or developed in all regions, but nevertheless bring radical changes to the countryside.

But these changes are a blind spot for official statistics systems, which propose definitions of urban and rural populations and territories using heterogeneous criteria that vary from one country to another, based either on a level of population, on an administrative status, or on the importance of agricultural activity. The urban and rural categories therefore provide only a vague – and sometimes wrong – idea of what the reality is. Demographic projections for the next 20, 30 or 40 years indicate a very general trend that obscures the substance of regional change.

• Strengthening the drivers of diversification

Rural areas are still firmly rooted in agriculture and there are very few rural households that are not engaged, at least partially, in agricultural activities. This importance of agriculture is reflected in the proportion of agricultural workers in the total working population, which remains very high, with some countries showing the highest levels in the world, at more than 75%. Although this agricultural reality is significant, it is no longer exclusive.

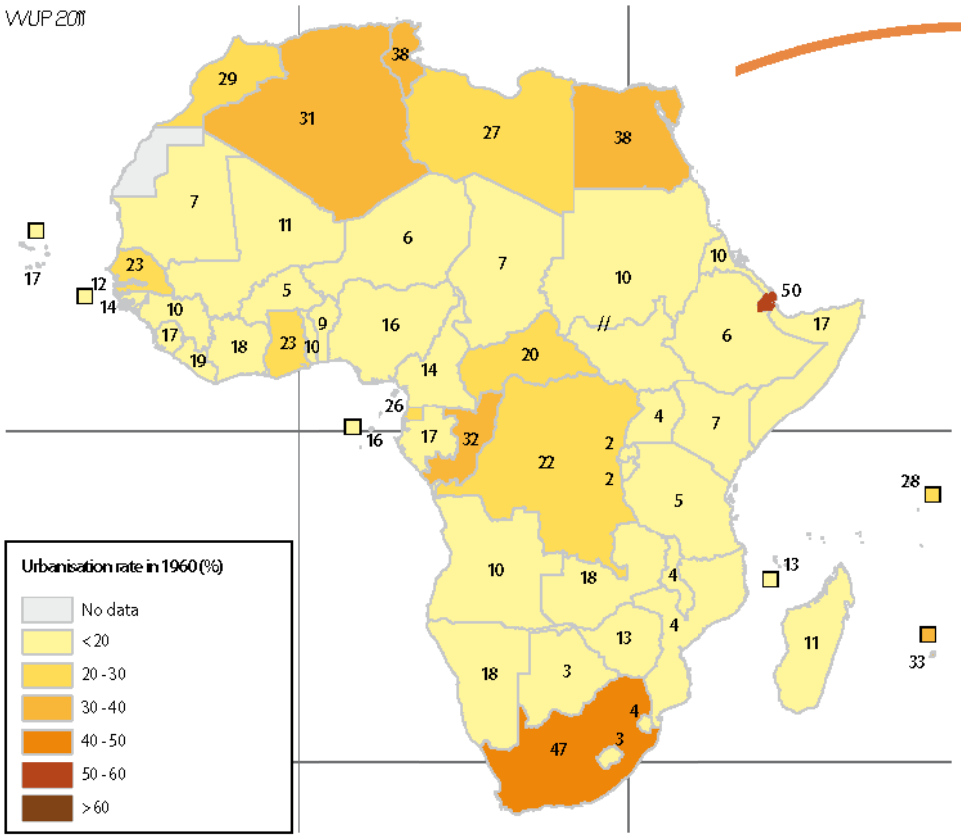
Indeed, better connections to markets for agricultural products and consumer goods, slow improvements in living standards that generate new demands, and increased mobility between the countryside, rural centres and small towns, produce numerous opportunities for diversifying activities that rural people are gradually exploring (trade, transport, product processing, and different crafts). Households are thus increasingly diversified, with different specialisations depending on the family members, some of whom do seasonal work during slack times in the agricultural cycle. They are also sometimes based in several locations, with activities on either side of this increasingly blurred separation between rural and urban life, frequently made possible by commuting where transport conditions and distances permit. We thus see villagers becoming urban (and also new urban dwellers who may have retained a smallholding), and these changes may take the form of family "archipelago" systems, where several members of a household are engaged in activities in different places, sometimes far apart (in the city or even abroad).

However, while this rural diversification is a strong trend, its composite nature should not be overlooked. It occurs within households without necessarily producing a full specialisation in a single activity: income levels remain low and full-time salaried work is rare, in both rural areas and small towns. As a result, full exit from agricultural activity remains limited and rural households are permanently managing a kind of new sectoral and spatial mobility.

These changes are important. But they are not enough to produce any overall significant improvement in living standards. Rural income levels in sub-Saharan Africa remain extremely low and increasing them would require both improving agricultural performances and developing the functions of small towns. There lies the challenge for regional development.

M8. Urbanisation in 1960

WUP 2011



M9. Urbanisation in 2010

Source: WUP 2011

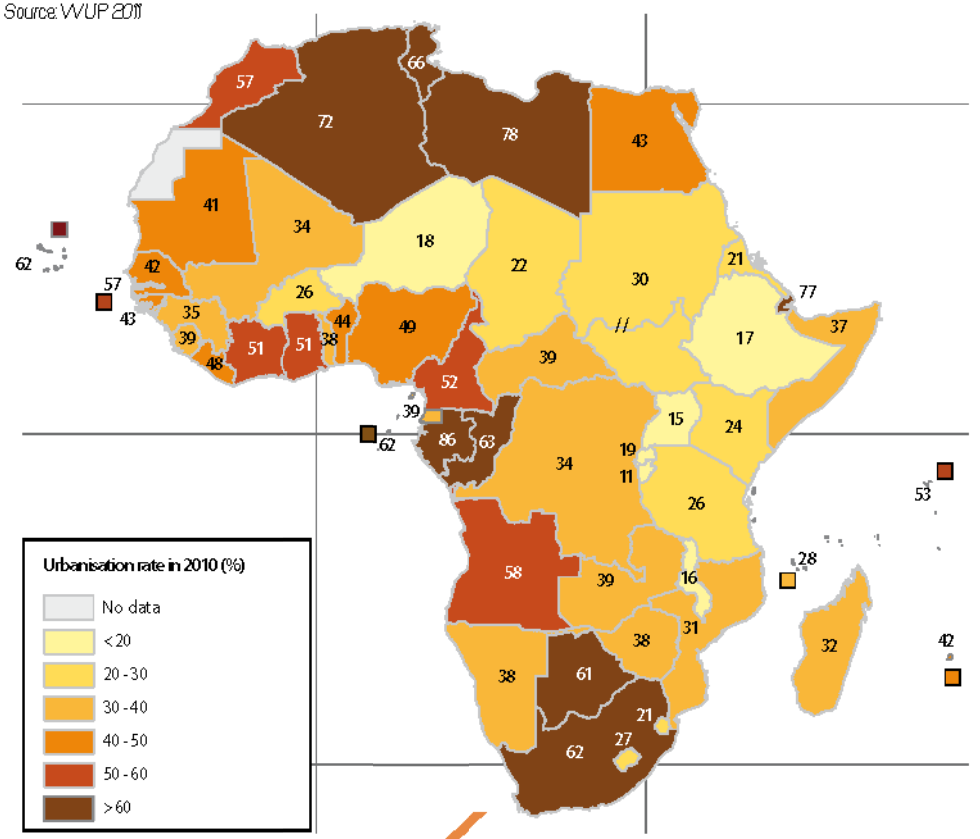
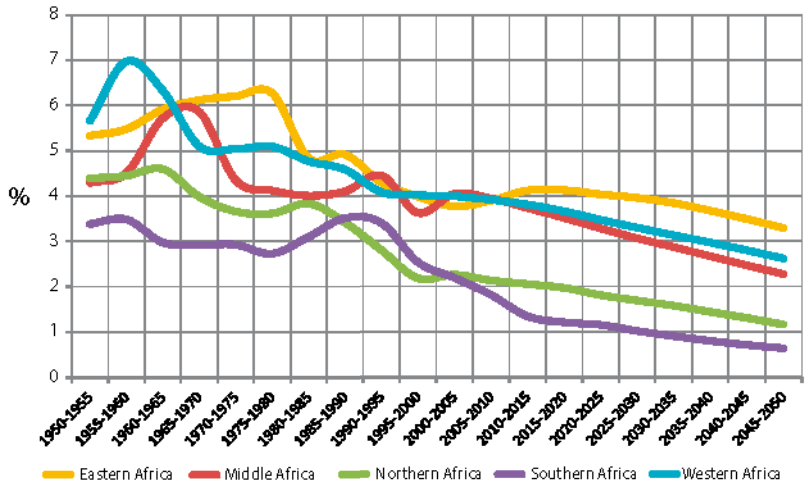


Fig. 2. Urban growth rate by major region (1950-2050)

Source: WUP 2011



Géraud Magrin

Urbanisation in Africa: growth, plateau and uncertainty

Sustained urban growth over the last 60 years has enabled Africa to narrow its urbanisation gap. But its urbanisation process reflects the uncertainties of its development path. Will the continent conform to the economic and urban transition pathways seen elsewhere, where the progression of urbanisation accompanies economic development, or will we see a stagnation of "classical" urbanisation, which will level off under the effect of the permanence of natural resource-exporting countries?

• A spectacular catch-up

Africa is experiencing the most rapid urban growth in the world (3.2% per year), with a marked difference between sub-Saharan Africa (3.6%) and North Africa (2%). In sub-Saharan Africa, the urban population increased tenfold between 1950 and 1990, while the total population tripled. The population of Conakry, the capital of Guinea, was multiplied by 60 between 1950 and 1990. In a matter of a few decades, Africa has travelled the same path that Europe covered in two centuries.

This high urban growth is explained first by the very low levels of urbanisation at the beginning of the period. The slowing of the growth rate further to the economic crisis of 1980-1990 is now being felt across the whole continent, but very differently depending on the region.

• Two urban Africas

The rates of urbanisation – the urban population as a percentage of the total population – were lower than the global average in 1960 and in 2010. However, two major types of situation exist.

The most urban Africa is found at either end of the continent. In the three Maghreb countries, the two Mashreq African countries and in South Africa, city dwellers accounted for about a third of the population in 1960, and sometimes almost half (South Africa). In 2010, the rate of urbanisation was close to two thirds of the population. The change was most pronounced in the countries with considerable oil revenues (Algeria and Libya).

In sub-Saharan Africa, the rates of urbanisation are lower. In 1960, they stood at between 10 and 20%, with some particularly rural countries where urbanisation was in its infancy (less than 10% city dwellers), especially in East Africa (Ethiopia, Uganda, Burundi, Rwanda, Kenya, Tanzania, Mozambique) or in the Sahel (Burkina Faso, Niger, Chad). There were some cases of rates of urbanisation exceeding 20%: these were the countries that had concentrated specific political functions (Senegal and Congo, the administrative capitals of the colonial federations), countries where the booming mining economy or export agriculture had stimulated early urbanisation (current DRC, Ghana), or several sparsely populated territories (Equatorial Guinea, Djibouti).

In 2010, rates of urbanisation everywhere had considerably increased, and often doubled, to now stand at between 20 and 40%. The countries that remain the most rural (between 10 and 20% urban dwellers) are the highland countries of East Africa and the Great Lakes (Ethiopia, Rwanda, Burundi, Uganda, Malawi), and some Sahel countries (Niger). Some countries only experienced minor urbanisation, reflecting an economic slump related to political problems, as in the DRC, Somalia, Sierra Leone and Eritrea, where rates of urbanisation have at best barely doubled since 1960, whereas elsewhere they have often tripled or quadrupled. Furthermore, two factors help to explain national differences: first, coastal countries are generally more urbanised than landlocked countries (Senegal and Mauritania versus other Sahel countries); second, the countries that have developed the exploitation of extractive resources, especially oil, have also witnessed a particularly rapid rate of urbanisation (Angola, Nigeria, Botswana), sometimes completely emptying rural areas in the case of sparsely populated countries (Gabon).

• Is growth halted or paused?

The urban growth rates by major region, which are high everywhere, are showing signs of slowing. In 2010, North Africa joined Southern Africa with moderate urban growth rates (1.5-2% / year), a trend that is expected to continue (1% / year projected in 2050), since the rural reservoirs are already largely used up.

In sub-Saharan Africa, the bulk of urban growth took place in the 1950s to 1970s (up to 6-7%), before levelling off (4% in 2010, around 3% projected in 2050). Convergence was seen there during the major economic crisis of 1980-1990, at the height of the population surge. While the natural growth rate remains high (2.6% per year), this slowing of urbanisation means that the migration rate is now only slightly positive.

It has been suggested that the "urban pause" could be a result of the crisis: in the absence of new engines of growth, unemployment, poverty and urban problems of all types make cities less attractive and urbanisation consequently reaches a ceiling at a level below 50%. Avoiding this pitfall implies inventing innovative development models suited to new forms of territorial development.

M10. Urban population centres in 2010

Source: Africapolis (see note 1)

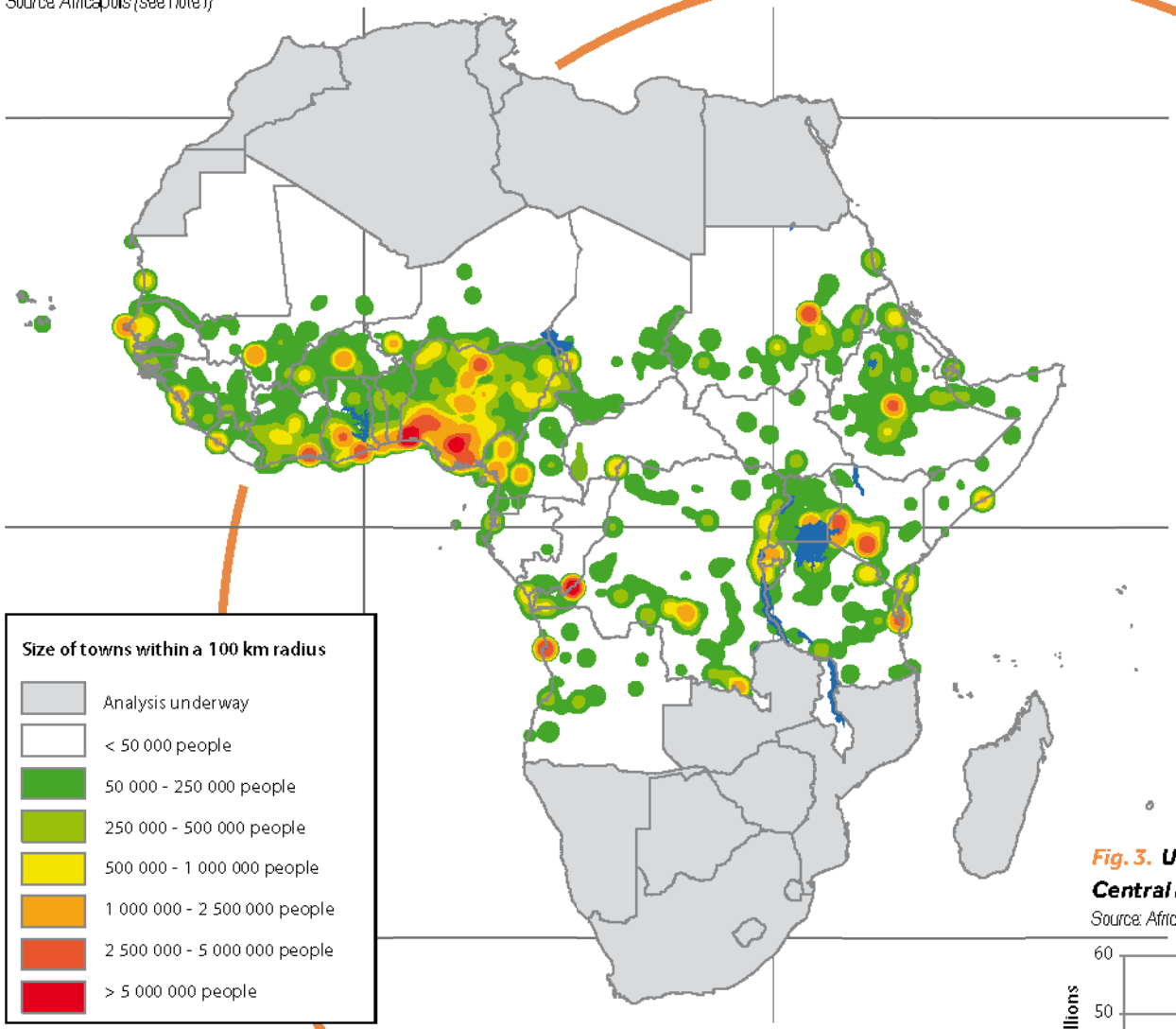
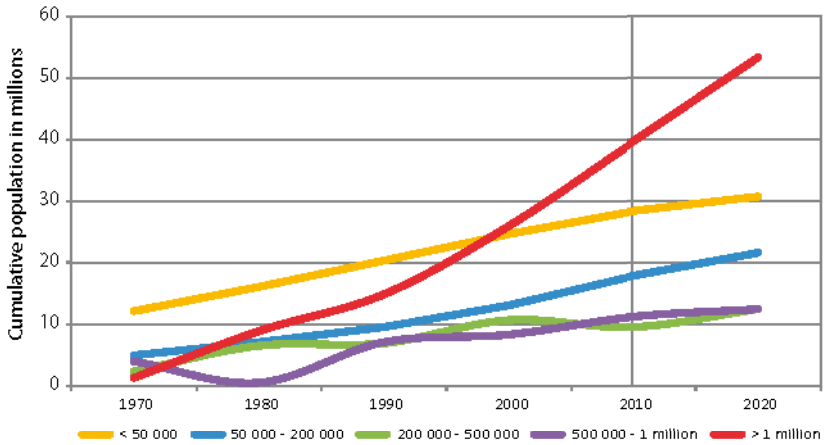


Fig. 3. Urban growth by city category in West, Central and East Africa (1960-2020)

Source: Africapolis



Jacques Imbernon

Urban consolidation and diversification: megacities and archipelagos

The extraordinary urban growth that characterises the whole of Africa is accompanied by the progressive emergence of megacities and by the reorganisation of urban networks. This urbanisation is nevertheless affected by the weakness of the lower and intermediate levels, which hampers the diversification of local economies. This is the challenge for territorial development.

• Diverse urban morphologies

Urban growth is currently far from the record levels observed from the 1950s to the 1970s, when it reached 7-8% per year (doubling the population in 10 years) and up to 10% for some countries (Mauritania, Côte d'Ivoire, Togo, Tanzania, Mozambique, Botswana).

At the same time, urbanisation is changing shape. Urbanised areas are no longer to be considered solely in terms of the density and continuity of built-up areas, but also in terms of the "connectivity" of city networks. Indeed, large-scale articulated urban zones are emerging, such as along the Gulf of Guinea coast, between Accra and Lagos.

Africa has few large cities compared to the other continents: around 30 million-plus cities for a billion inhabitants, whereas the United States has 40 for 285 million people. These large cities constitute very diverse urban systems, according to three dominant types: macrocephalic, as is the case in Senegal, Tunisia, Côte d'Ivoire, Mali, Guinea and Madagascar – the capital concentrates more than 20% of the total population of the country, and more than 60% of the urban population (80% for Conakry), and there is a considerable size difference with the second largest city in the country; bicephalic, as in Cameroon, where Yaoundé is the administrative capital and Douala is the economic capital; and multipolar–hierarchy systems, as in North Africa (Algeria, Morocco), Southern Africa and Nigeria.

• New cities and "bottom-up" urbanisation

The emergence of new cities is a result of consolidation and endogenous growth processes, or even, in some cases, of proactive policies. "New cities" have thus been created ex nihilo (or from a small agglomeration) based on regional planning goals. This is the case of some new national capitals (Nouakchott, Dodoma, Yamoussoukro, Abuja), some of which now have almost a million inhabitants.

But it is the growth of existing urban agglomerations that constitutes the major phenomenon: the development of secondary cities based on their administrative functions (centres of regional divisions) and according to the potential of their hinterland; and in situ urbanisation of large villages that become rural centres and then small towns based on diverse functions (trade, services or even religion).

This "bottom-up" urbanisation is particularly intense in West, Central and East Africa. The category of small towns of less than 50 000 people shows the highest growth, after that of large million-plus cities, while intermediate cities (between 200 000 and a million people) appear as the weakest link in urban networks.

• The emergence of "metropolitan archipelagos"

Small and medium-sized towns are proliferating on the periphery of large cities. This is not a suburbanisation process such as those seen in the richest countries: the employment and transport systems do not permit this development. In West Africa, these towns are part of an urban fabric that springs up along the main radial roads to form vast multipolar basins. This is particularly the case in the Gulf of Guinea and all over Nigeria. We see similar systems in the Ethiopian highlands, in the Nairobi-Kampala corridor and in the Great Lakes.

These urban basins, which are the foundations of future megacities, can be linked to the concept of the metropolitan archipelago developed by Olivier Dollfus. Today in Africa, we thus see "clusters of towns" forming archipelagos and functioning in networks, following a different pattern than that of centres that polarise areas according to the classical centre-periphery model. The functioning of these networks is not based on contiguity (distance), but on topological connectivity. The road system plays a key role.

Thus, in West Africa, the development of coastal areas, where the major coastal cities are located, has resulted in a "comb-shaped" structure. These meridional roads, perpendicular to the coasts, themselves produce a proliferation of small agglomerations – between Dakar and Touba, Abidjan and Bouaké, Accra and Kumasi, Lomé and Kara, Cotonou/Porto Novo and Abomey, Lagos and Ibadan – that follow the former trade routes. These north-south networks help to foster complementarities between ecological zones (forest, savannah, Sahel, desert); they create veritable human settlement structures.

• An incomplete urbanisation model that remains pending

The emerging Africa is today one of major cities that are connected to the global city networks. But this connection will only foster development if it goes hand in hand with the consolidation of the urban network, whose current imbalance constitutes an obstacle. The archipelagos tend to accentuate empty areas, and the lack of clear urban functions – a result of the priority given to large cities – means small towns and especially regional centres suffer from structural weakness that puts a strain on territorial consolidation. This weakness of intermediate urbanisation (the missing link of urbanisation) is a major obstacle that limits the densification of urban-rural linkages, which is the very essence of a rural economic diversification capable of producing structural change.

This integrated territorial development in response to a metropolisation that has become difficult to manage is the key to a new development model.

Glossary

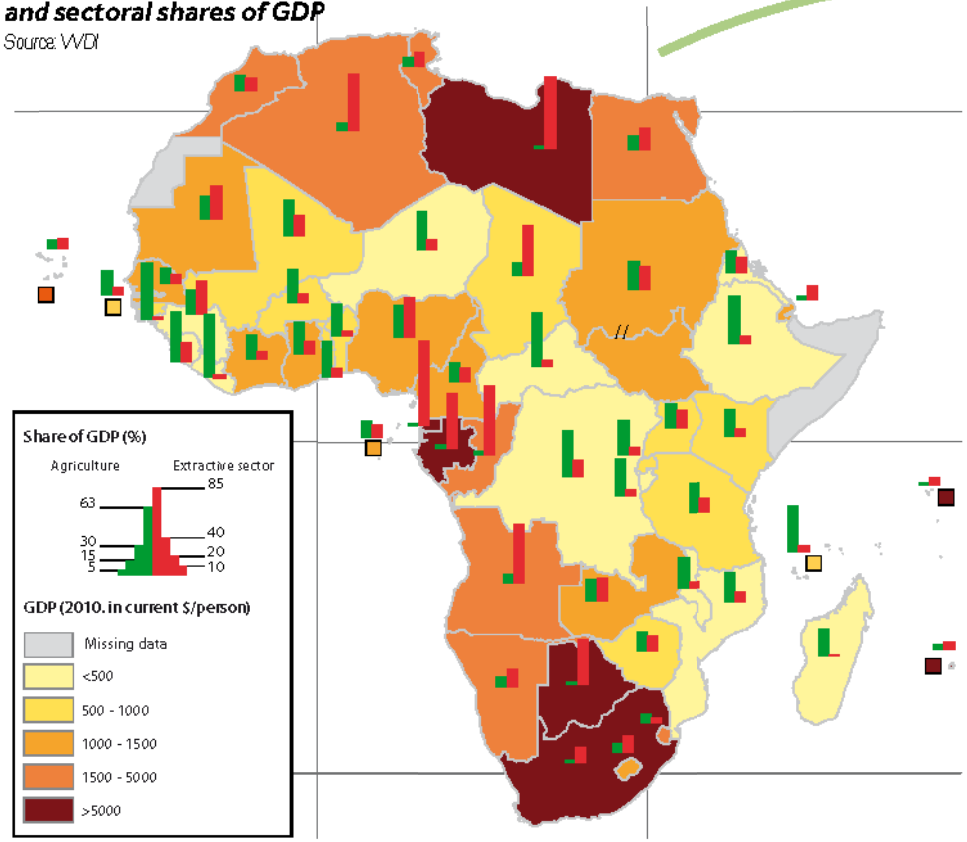
- Megacity: a megacity is a very large metropolitan area with several million inhabitants. The population threshold was set by the UN at 10 million people. There are around 20-25 megacities in the world.
- City: the definition of a city varies according to national statistical systems, leading to considerable imprecision in urban and rural categories. For the AFRICAPOLIS programme, which provides a mapping of urban areas, any local administrative unit with more than 10 000 inhabitants, whose main agglomeration accounts for more than half of that population, is considered to be urban. An agglomeration is defined as a group of buildings that are never more than 200 metres apart; it excludes from the urban area any agricultural uses.

3

ECONOMIC DYNAMICS AND AGRICULTURAL PERFORMANCE

M11. Average income per capita and sectoral shares of GDP

Source: WDI



M12. Average growth of GDP per capita (2000-2010)

Source: WDI

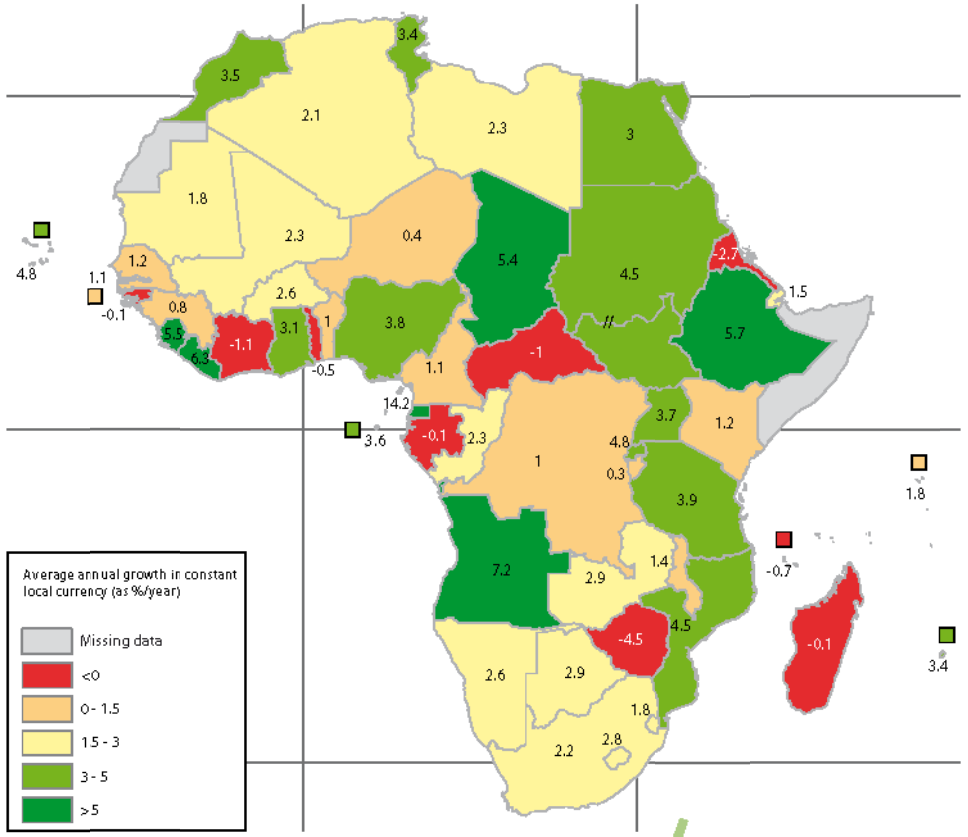
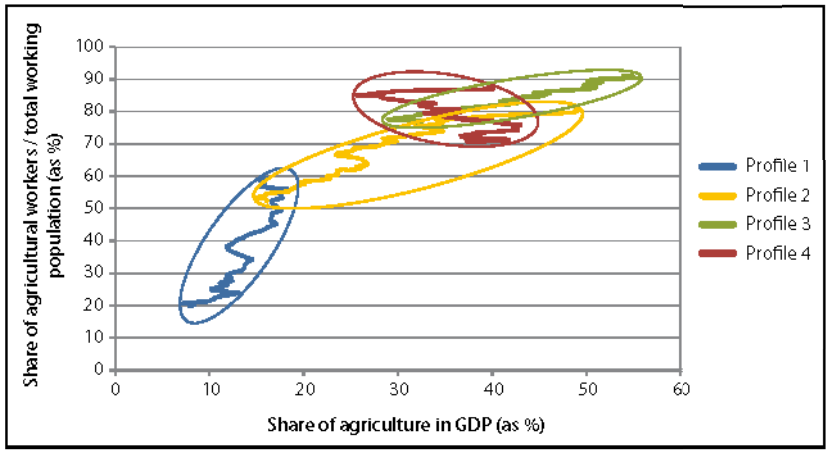


Fig. 4. : Profiles of structural change (1961-2010)

Source: FAOSTAT, WDI and author's calculations (see box and note 2)



Bruno Losch

A SLOW ECONOMIC TRANSITION CALLING FOR A NEW TERRITORIAL MODEL

The continent has experienced a very slow economic transformation characterised by the persistent weight of the agricultural sector and by urbanisation without industrialisation. The pathways of structural change nevertheless reveal considerable national differences depending on whether or not the countries have revenues from extractive industries, with some countries commencing effective economic diversification. The "economic consolidation" of local dynamics is a possible response to the need for a new development model.

• Very different national situations

Opinions on the economic situation of the continent vary considerably. The recurrent crises since independence have left their mark, while the sustained growth rate in the region in the 2000s, after a long stagnation, provides arguments for the proponents of a possible emergence. Average per capita income has increased by 30% over the last 10 years, African growth has essentially stood up to the recent global recession. The prices of mineral resources have played a clear part in this trend, but they do not tell the whole story. Some countries, especially in East Africa (Ethiopia, Rwanda, Mozambique) are progressing rapidly without benefiting from mineral or oil wealth.

Beyond the current situation, the region is primarily characterised by considerable disparities in terms of growth, with some countries even having negative average growth rates since 2000 due to political problems or conflicts. Three separate groups can be identified: North Africa alone accounts for 35% of the continent's gross domestic product (GDP); one country, South Africa, generates 20% of its GDP; and the rest of sub-Saharan Africa (47 countries) provides the remaining 45%, even though it accounts for 75% of the population. Consequently, 27 of the 48 sub-Saharan States are in the World Bank low income country group (< 1 025 $ per person per year), with 13 of them at less than 500 $, which means specific situations of extreme poverty, and less than 2 $ per person per day on average.

• Limited structural change but major challenges

While the economies of North Africa and of South Africa have been largely reorganised over the last 50 years as a result of their urbanisation and the development – albeit uneven – of industries and services, sub-Saharan Africa remains lastingly marked by the weight of its primary sector and the exploitation of its natural resources (soil and subsoil). Among the countries of continental Africa and Madagascar, 19 base more than half of their GDP on agriculture, mining and energy. The manufacturing sector is extremely limited and only the services and construction sectors – boosted by urban growth – have progressed, to the detriment of the production of goods. This situation is a far cry from the emergence processes seen in East and Southeast Asia.

There are of course many reasons for this structural weakness. These include the late integration of the continent into the world economy, a restrictive colonial administration lasting until the 1960s and even 1970s – marked by territorial fragmentation that was maintained at the time of independence –, and a recent, rentier urbanisation founded on State administration and raw materials. Sub-Saharan Africa is a place of urbanisation without industrialisation, a very specific situation in the economic history of the world.

This inertia increases if we also consider the structure of employment and the weight of agriculture in the economically active population: in countries with large rural populations, agriculture often concerns more than 70% of workers. The subcontinent remains predominantly engaged in agriculture.

A key question is now that of the response to the many challenges faced by the continent. The first challenge is a very high population growth, characterised by the surge in the number of young working-age people. Second, this surge occurs in the context of globalisation that generates obvious opportunities, but also the constraints of international competition exacerbated by differences in competitiveness, which are not currently in Africa's favour. Finaly, these constraints are likely to increase as a result of global climate change and pressure on non-renewable natural resources.

• The search for a new model

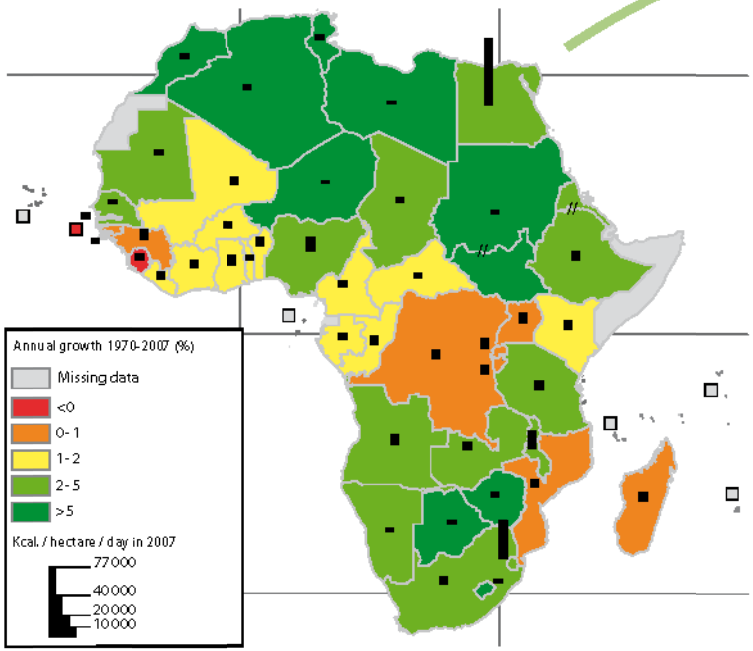
The rapid increase in the economically active population and the improvement in the ratio of working-age to inactive people, often termed the "demographic dividend", appear to be favourable to growth. They nevertheless imply defining strategies, in a competitive international environment, in order to provide as many jobs as possible while increasing income levels. There are of course no "one size fits all" solutions in terms of policies, but between the illusions of rapid industrialisation and the priority given to conquering distant markets, it seems that the considerable potential of the continental/domestic African market opens up promising avenues for territorial economic consolidation. Stepping up regional economic integration, connecting cities to their hinterland, strengthening the economic attributes of medium-sized towns, stimulating rural demand through greater support for the agricultural sector, and increasing training efforts are just some of the levers available for economic diversification to drive development.

Different pathways of structural change

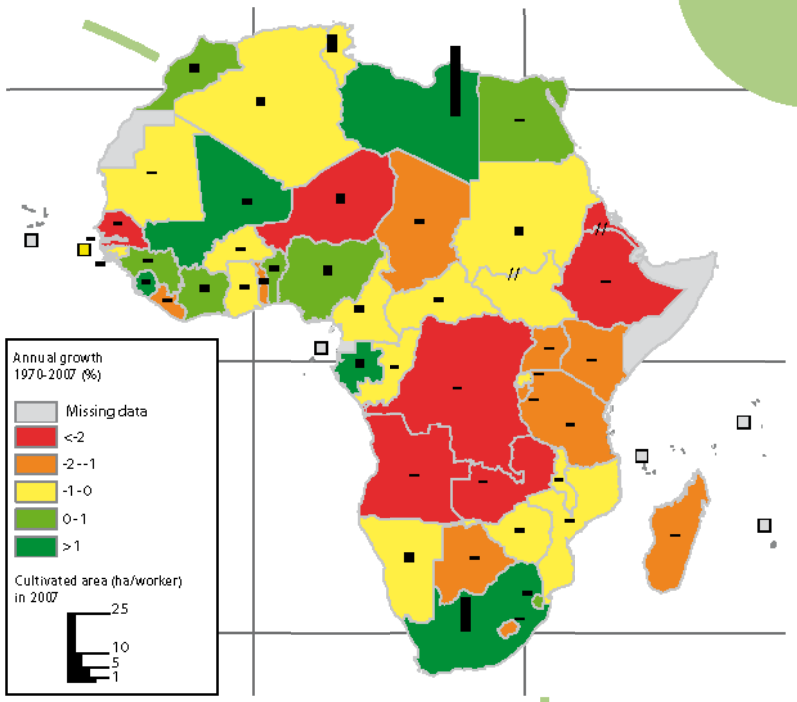
The shares of agriculture in GDP and in the economically active population are indicators that are frequently used to analyse the structural situation of an economy. Taking their joint evolution into account makes it possible to outline pathways and also rates of change. This approach is simplistic and is faced with the variable quality of data, but it helps to shed light on some very different national situations. Figure 4 shows four profiles of structural change that reveal some considerable differences in terms of changes seen since 1960 (the curves for each profile read from right – 1961 – to left – 2010). Profile 1 corresponds to the countries that have experienced the greatest changes, characterised by high urbanisation and a significant exit from the agricultural sector. It includes rentier economies based on the export of mining products (Algeria, Libya, Congo), and diversified economies marked by industrial development (South Africa, Mauritius, Tunisia), that have sometimes maintained a dynamic agricultural export sector (Morocco, Egypt). Profile 3, on the other hand, is that of the highly rural and agricultural countries (East Africa, Madagascar, Mali, Niger), where overall change was particularly slow over the period. Profile 2 constitutes an intermediate situation in which the share of agriculture is smaller, but nevertheless remains large (Côte d'Ivoire, Ghana, Cameroon, Senegal). Finally, profile 4 presents the atypical evolution of countries where the weight of agriculture has increased: these are mainly countries that have experienced crises and where the agricultural sector provided a refuge from the overall lasting downturn (Sierra Leone, Liberia, Guinea-Bissau, DRC and CAR).

3

M13. Productivity of land
Source: Dorin 2011



M14. Availability of cultivated land
Source: Dorin 2011



M15. Productivity of labour
Source: Dorin 2011

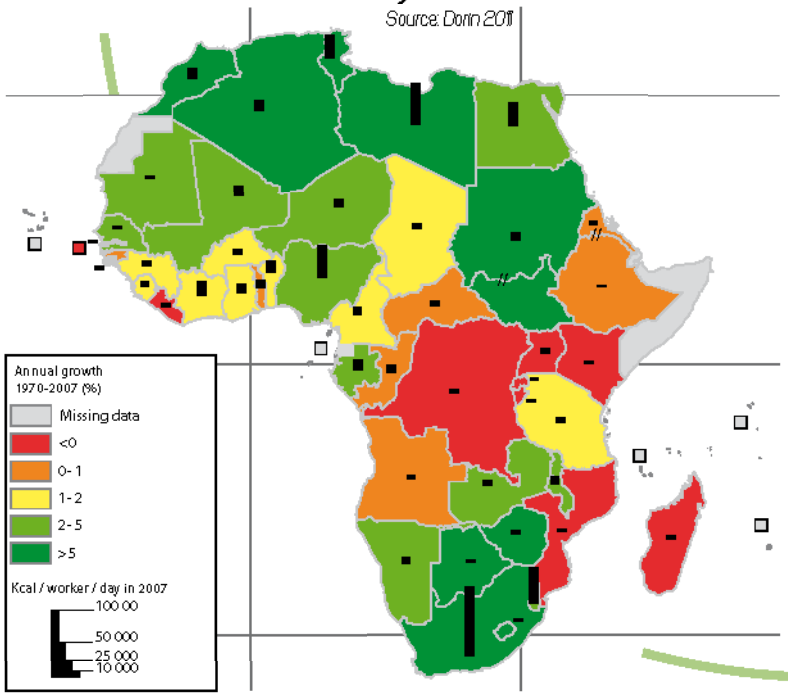
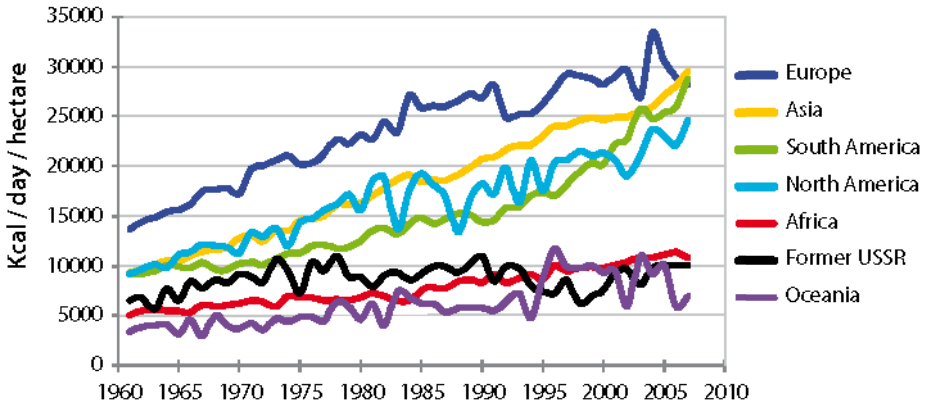


Fig. 5. Productivity of land compared by major world region
Source: Dorin 2011



Bruno Dorin

The untapped potential of food production

Food production has essentially kept pace with population and urban growth thanks to the expansion of cultivated areas, but also to higher yields. The gradual decline in food production per capita, which is offset by imports, raises the question of the capacity to respond to population increase while the cultivated area per worker is getting smaller. But the low level of productivity leaves considerable room for progress.

• Uneven performances falling short of continental needs

In 2007, Africa accounted for 15% of the world population and 16% of cultivated land. However, in the same year, this land generated only 8% of all plant-based calories produced in the world (and 4% of animal-based calories). This gap nevertheless masks an important trend: since 1970, this plant-based food production has increased by 2.6% per year on average, a rate similar to the one seen in Asia (2.7%) and slightly higher than the global average (2.15%).

This positive trend is composite and ambivalent. It is a result of the expansion of cultivated land – which has averaged almost 0.9% per year since 1970 (the highest rate observed after Latin America) – but also of yields, which nevertheless have the lowest rate (1.7%) after Europe and the former USSR. Starting from a low level, these yields therefore remained among the poorest in the world in 2007. Yet they accounted for 65% of the increase in production, compared to the 35% attributable to the expansion of cropland.

However, this increase in absolute terms should not overshadow a far more worrying trend: with the continent witnessing the highest population growth in the world (2.65% per year on average), plant-based food production per capita declined by almost 0.1% per year over the period – the only negative rate observed anywhere in the world –, reaching only 2 785 kcal/person in 2007 (the global average is more than 5 000 kcal, including Africa). Consequently, per capita food supply, which remains among the lowest in the world, especially for animal products (milk, meat, eggs) can only be improved by increasing imports.

• A wide range of situations but similar challenges

Analysing the processes underlying this overall trend implies taking into account considerable differences between countries that reflect the wide variety of situations in Africa:

• The average growth in food production yields (expressed in kilocalories per hectare) has frequently exceeded 2% per year, especially in countries that have benefited from progress in irrigation. Tunisia and Morocco stand out, with a rate of more than 10%. However, daily output in 2007 was consistently lower than the global average (22 000 kcal), with the exception of Egypt and Swaziland, partly due to the large amount of sugar they produce.

• Owing to a lack of sufficient alternatives in terms of employment outside agriculture, the population employed in agriculture in Africa has increased by 1.9% per year, which is much more than the increase in cultivated areas (0.9%). As a result, the cultivated area per worker has diminished in three quarters of the countries, to reach levels almost as low as in Asia: in more than 20 countries the average area is less than 1 hectare. This trend is paradoxical given the potential for cropland expansion – which is largely unknown – and highlights major problems of access (land tenure status) and accessibility (isolation).

• This reduction in cultivated areas per worker is problematic as it contributes, along with the sluggish increase in yields, to low labour productivity (the ratio of kilocalories per worker is an approximation of income at constant prices: kcal/worker = kcal/ha x ha/worker). The productivity of agricultural labour has fallen or only slightly improved in Central and East Africa and, in 2007, in more than 30 countries, it remained below the already very low Asian average (14 600 kcal/worker/day compared to more than 260 000 in Europe, for example).

With such low levels of income from work, what are the prospects for agricultural workers? Migrating to the slums or surviving in the countryside? Alongside opportunities for rural diversification and for migration towards decent jobs in cities, the solutions must come from the promotion of appropriate agricultural development models. The low levels of productivity leave considerable room for progress that can be harnessed to meet the many economic, social and environmental challenges, which are exacerbated in Africa more than elsewhere in the world by a demographic transition that is far from being complete.

Why use food calories as a unit of measurement?

Analysing food performances in calories is unusual. This analysis has disadvantages in economic terms (the value of a calorie of a grain of corn is not the same as that of a grain of coffee) and nutritional terms (calories are an insufficient indicator of the nutritional value of production and consumption). But it also has some huge advantages. Converting quantities (produced, sold or consumed) into calories makes it possible:

- to aggregate volumes of very different products without resorting to monetary conversion, which poses other problems;

- to assess the yields of complex systems combining several crops per year on the same plot.

Here, a "food product" is defined as any biomass which, in its primary form, may serve as food for humans, and which effectively serves this purpose (cereals, roots, oil, etc.) or not (seeds, animal feed, biofuels, etc.), after processing or not. This definition therefore includes most agricultural products, with certain exceptions, such as fibres, rubber, tobacco or forage (alfalfa, straw, etc.), for which conversion into food calories is impossible. As these crops also occupy "cultivated" areas (annual and perennial crops), failure to take them into account could introduce a bias into the estimation of yields (production/area). This is particularly the case in cotton-producing regions in Africa.

This analysis in terms of food calories is largely based on FAO data. It was used for the Agrimonde foresight study. The detail of the sources and methodology used is presented in Dorin 2010 and Dorin et al. 2013.

3

M16. Share of agricultural products in exports of goods and services

Source: Comtrade

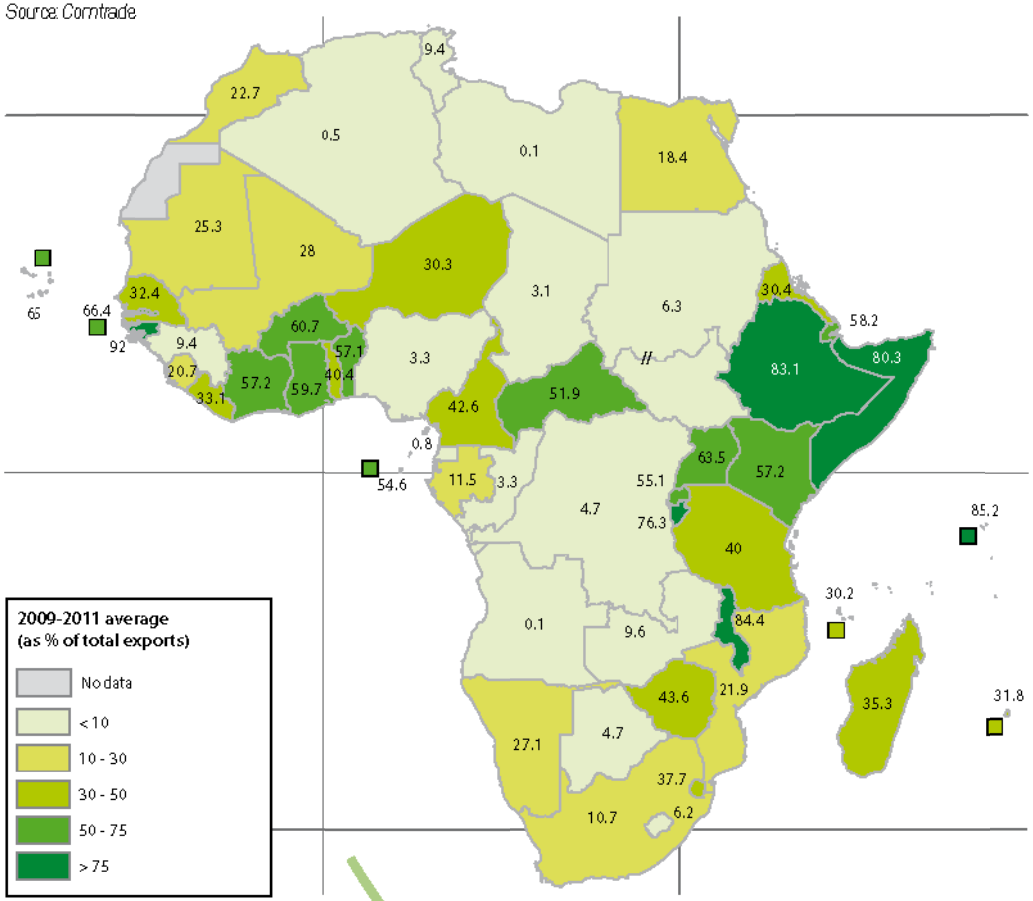


Fig. 6. African market share in world agricultural exports

Source: Comtrade

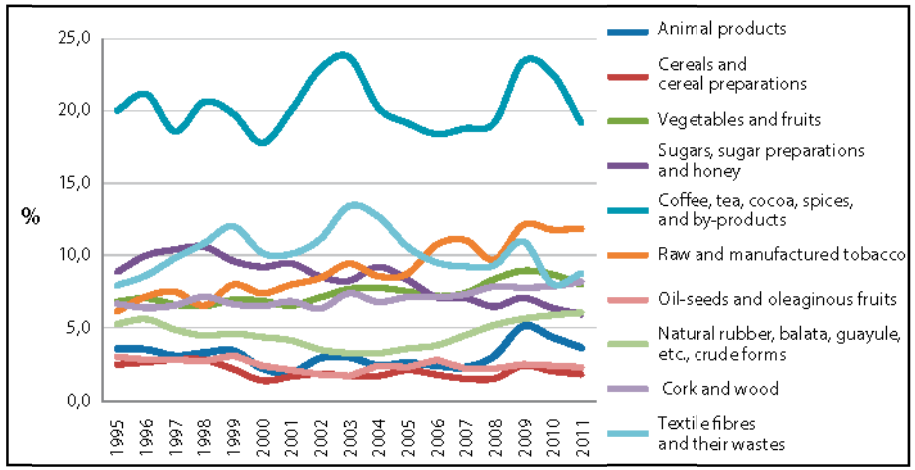
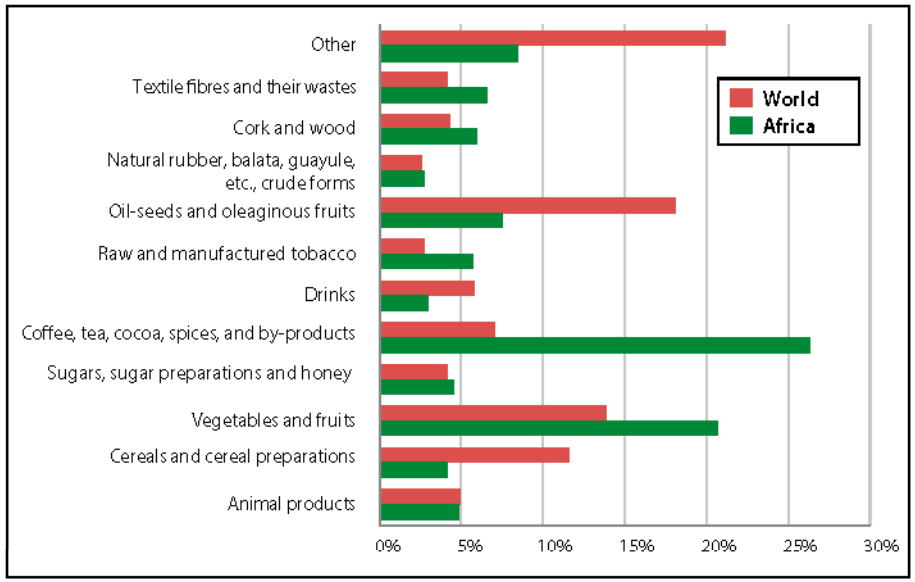


Fig. 7. Composition of agricultural exports compared between Africa and the rest of the world (2009-2011 average)

Source: Comtrade



Benoît Daviron

The vulnerability of export agriculture

Exports of agricultural products still play a key role in many countries, but they have been relegated by the rise of the extractive sector at the continental level. While the composition of exports has changed little, with the exception of growth in fruit and vegetable exports, Africa's market share has stagnated and is now significant for only a few categories of products – a situation that generates vulnerability due to price volatility. New demand, particularly for food products, nevertheless provides prospects for growth.

• Agricultural exports supplanted by the booming extractive industry

The share of agricultural products in total exports of African goods and services has considerably decreased over the last 15 years, falling from 20 to 11%. This decline has occurred solely to the advantage of the extractive sector (mining products and oil), whose share has risen from 52 to 73%. This trend reinforces the continent's specialisation in the export of its natural resources and reveals the lack of diversification of its productive base towards manufactured goods and services.

Agricultural products are marginal or even totally absent from export values in many oil-producing countries such as Angola, Algeria, Libya, Equatorial Guinea, but also Nigeria, Congo and Chad, highlighting the importance of the "oil syndrome". In contrast, they account for almost all exports for many countries: more than 90% for Guinea Bissau, and more than 80% for Ethiopia, Malawi, Seychelles and Somalia.

• Stabilised market shares after a long decline

Africa represents around 6% of world exports of agricultural products (excluding intra-European Union trade). This market share has been relatively stable for the last 15 years, after a long decline that began in the early 1960s: at that time, the continent's share was about twice what it is now, as a result of the imperial self-sufficiency policies the European colonial countries implemented after the First World War and the crisis of 1929.

This momentum was interrupted by the rise of protectionist agricultural policies in the industrialised countries, while the African countries – like other developing countries – were striving to build up and diversify their national economies through taxation of their agricultural exports. While competitor countries were commencing agricultural diversification and implementing an aggressive export policy, Africa was falling back on its tropical products alone, which were mainly destined for the European Union.

Despite this overall stagnation, several countries are nevertheless experiencing a recovery or showing positive trends, such as Ghana since the early 1990s, or Egypt and Ethiopia since the late 2000s.

• A long-term specialisation – coffee, cocoa, tea

The chief consequence of this commercial past is the maintenance and stability of the specialisation. Agricultural exports in Africa remain dominated by the group known as "tropical beverages": coffee, cocoa and tea. Cocoa, which accounts for 70% of these exports, now takes the lion's share, whereas it was still on a par with coffee (40/40) in 1995. The Gulf of Guinea countries produce 75% of world cocoa. But the production of African coffee has been marginalised: it now accounts for less than 12% of the world total. Although Ethiopia has become the world's fifth largest producer (5% of volumes), rivalling Colombia, the former major African producers have been pushed aside (Côte d'Ivoire, Kenya) or have disappeared (Angola). Where tea is concerned, Kenya still leads in terms of export volumes, followed by Sri Lanka and China.

At the international level, Africa is the only region to have maintained this high degree of specialisation in tropical beverages: these products now account for only 9% of agricultural exports from Latin America and 8% of those from Asia, compared to 26% for Africa.

The continent specialises in exports of three other product groups that are also declining in international trade: textile fibres (mainly cotton), timber and tobacco. Together, these currently make up 18% of African exports.

• New products, new markets

Fruits and vegetables are now second in the list of agricultural products exported (21%). Alongside traditional sectors such as bananas and pineapples in tropical zones, or citrus fruits in the Mediterranean region, Africa has witnessed the rapid development of fresh vegetable exports, and of relatively new fruits on international markets, such as mangos and papayas. The region is participating fully in the expansion of this sector, often considered as being "high value" (especially East Africa – Kenya and Ethiopia – or the Mediterranean region – Morocco and Egypt).

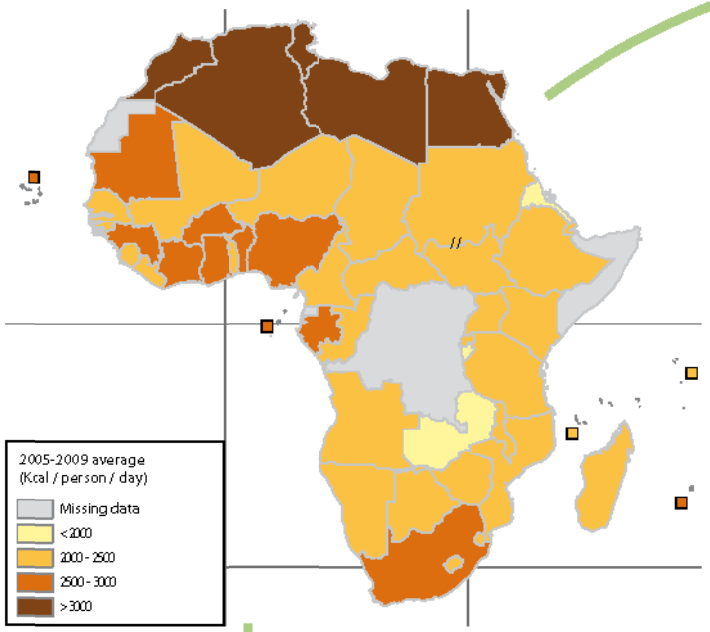
Conversely, where oilseed crops are concerned, despite the very rapid growth of international trade driven by demand from emerging Asian countries (especially China and India), and in spite of Africa's historic role in the cultivation of these crops (groundnut, sesame, palm oil), they only make up a small proportion of the continent's agricultural exports. Some very recent changes could, however, alter this situation in the coming years. Indeed, since 2008, new export sectors have emerged (such as sesame in Ethiopia), while traditional crops seem to be enjoying a revival (palm oil in Nigeria and Côte d'Ivoire) or developing due to new demand (olive oil in Tunisia and Morocco).

Providing solutions are found to the numerous non-trade barriers, intra-African trade in food products should become increasingly prominent in exports, driven by population growth in the continent and urban expansion. Beyond this, the world market provides some significant opportunities, which will nevertheless require good management of pressure on resources and their uses and, in many countries, of the macro-economic impact of the booming extractive sector.

3

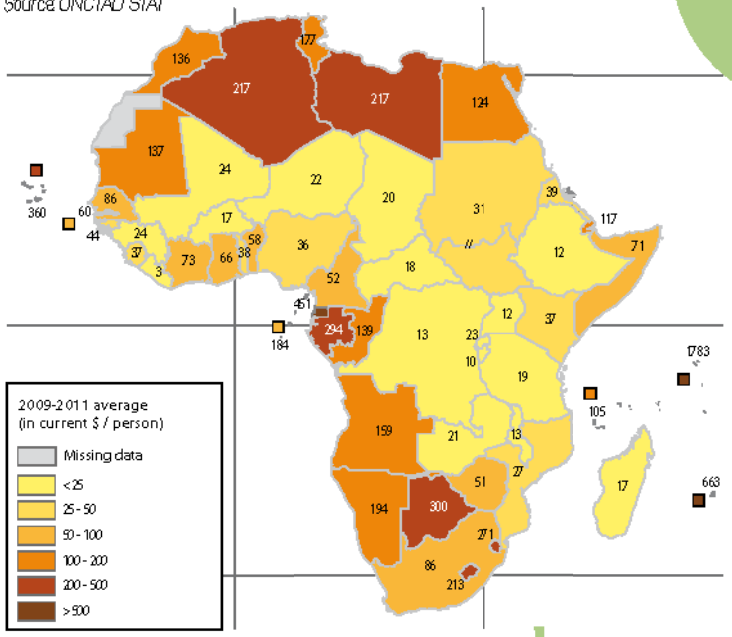
M17. Average food supply

Source: FAOSTAT (see note 3)



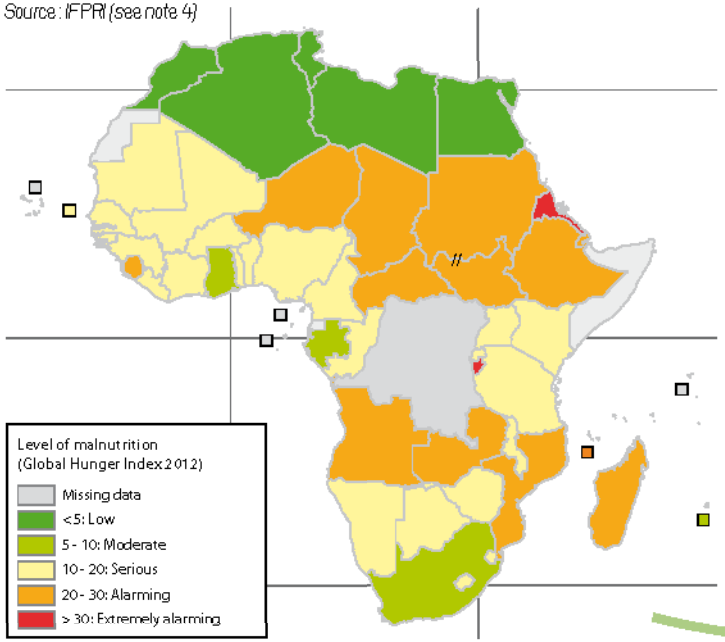
M18. Value of food imports

Source UNCTAD STAT



M19. Level of malnutrition

Source : IFPRI (see note 4)



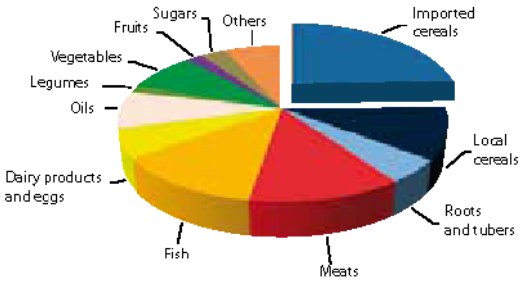
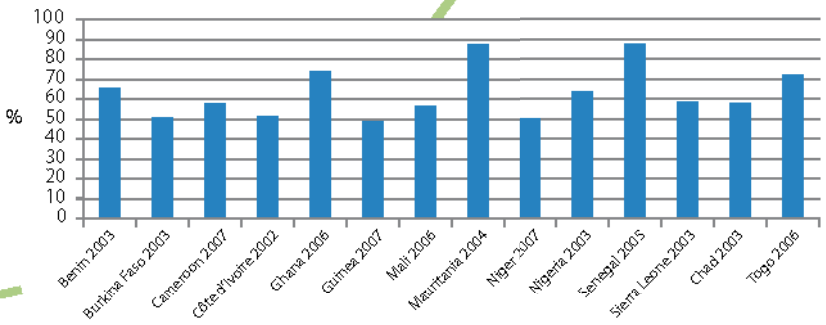


Fig. 8. Structure of food consumption in the eight WAEMU capitals in 2008

Source Household expenditure surveys (see note 5)

Fig. 9. Share of monetary expenditure in food consumption of rural households in West and Central Africa (14 countries)

Source Household expenditure surveys



Nicolas Bricas

Food: Africa progressively taking control of its domestic market

Changes in food consumption in African countries are challenging conventional thinking: rural areas are no longer dominated by farmers who consume their own production, and urban areas are not supplied solely by imports. But malnutrition persists, reflecting poverty rather than the food supply.

• Rural areas are connected to markets

According to the national household consumption surveys conducted since the 2000s, more than half of food consumed by rural people today is purchased. These rural populations now include residents of small agglomerations of several thousand people, many of whom no longer work in agriculture, or at least not exclusively: craft workers, transporters, small traders, etc. Moreover, farmers still produce cotton, coffee and cocoa, but also and increasingly, manioc, yam, maize and many other products for domestic African markets. They also buy some of their food. The food market in African countries is thus no longer purely urban; according to these same surveys, half of this market is now rural.

• Cities consume predominantly African products

African cities are heavily dependent on international markets for the supply of cereals. In the WAEMU country capitals in 2008, imported rice and wheat represented, in terms of value, two thirds of cereal consumption. But this dependence should not hide the fact that the products found on urban markets are nevertheless mostly local or regional. Food expenditure in cities is roughly divided into three equal categories: cereals and starchy foods (roots, tubers and plantains); animal products (meat, fish, dairy and eggs); and products for sauce (vegetables, pulses, oils, fruits, sugar and condiments). For the latter two categories, local products are predominant.

Urban markets are now important outlets for African production of maize, manioc, yam, plantain, meat, fish, oil, vegetables, fruit and different sauce condiments. The vast majority of these foodstuffs are produced by family farms. For African farmers, the opportunities provided by domestic markets in their own country or in neighbouring countries are now far greater than export markets. Food crops have become veritable cash crops, and are often processed using traditional methods: semolina and flour, oil, fermented, dried and smoked products, etc. A multitude of different activities take place around this agri-food sector, including the provision of packaging, energy, and equipment (mills, graters, presses, dryers, etc.), as well as transport, retail and distribution. This intermediate sector generates a large number of jobs, especially for women. Young people often see these jobs as being more attractive and having more potential for development than farming activities. In this respect, this agri-food sector now has a strategic role to play in meeting the rural employment challenge.

This consumption structure puts the role cereals play in the food supply into perspective. It also shows that the level of per capita food imports in African countries remains moderate, even if the levels reached in some countries make them particularly dependent on international markets: this is especially the case in North Africa and in some oil-producing and mining countries.

• Malnutrition persists because of poverty

Although the African continent has some strong agricultural dynamics enabling it to largely keep pace with the population surge, it is also affected by high rates of malnutrition. However, in general, this situation is a result of poverty rather than of a lack of food, even if the food supply remains insufficient in some countries or areas. Yet it is now not so much the scarcity of staple foods (cereals or roots and tubers) that is to blame, but the imbalanced diets of the poorest people. These cause nutritional deficiencies which, combined with the high prevalence of disease and inadequate health care, lead to malnutrition that is detrimental to human development and that also holds back economic growth.

• The challenges of the industrialisation of food processing

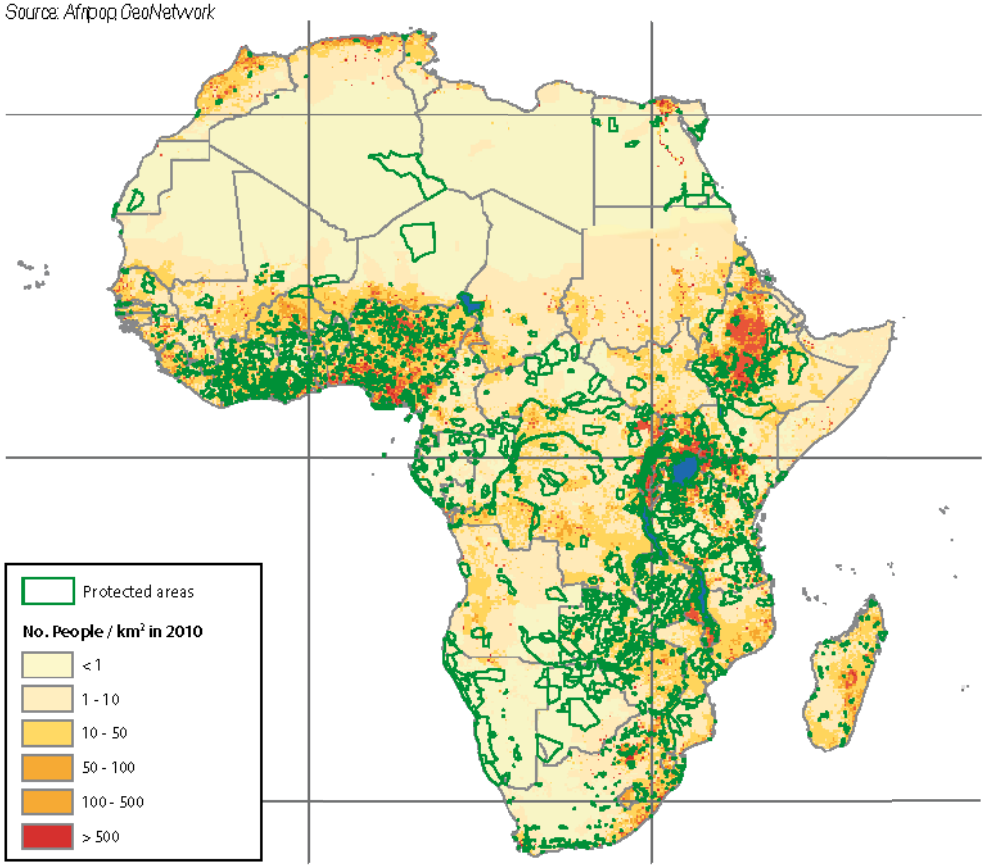
With the progressive emergence of an urban middle class, consumption patterns will change and supermarkets will gradually gain ground, bringing about changes in processing industries. These transformations, if poorly managed, are likely to present two major problems. First, the increase in standardised, mass-produced foodstuffs could marginalise products made with local raw materials and processed in accordance with the continent's culinary traditions. Second, an industrialisation of the agri-food chain encouraging the return on capital rather than on labour would rapidly compete with a sector made up of micro and small businesses that provides a large number of jobs and is extremely important for urban economies. Managing this agri-food sector transition is a key challenge. It requires a strong political will to develop a sector that is still predominantly small-scale, by accompanying its necessary transformation with professional training, credit suited to its investment needs, and a legal environment that takes into account its constraints, and by professionalising the sector in order to enable it to evolve fully.

4 NATURAL RESOURCES AND REGIONAL DYNAMICS

4

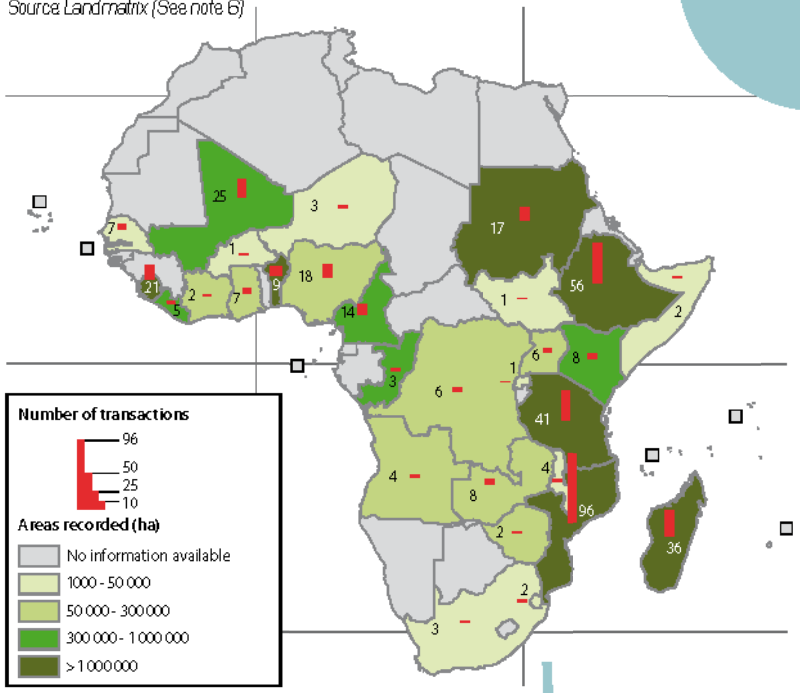
M20. Population densities and protected areas

Source: Afripop GeoNetwork



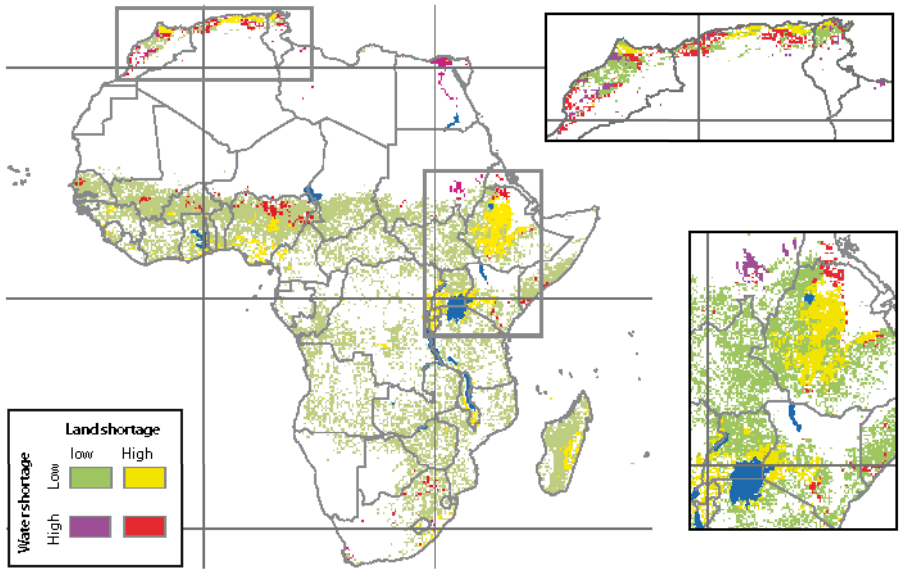
M22. Agricultural land deals

Source: Landmatrix (See note 6)



M21. Areas of pressure on land and water

Source: FAO 2011



Géraud Magrin
Bruno Losch

Empty land? Pressure on resources and development choices

Contemporary discourse conveys a representation of an Africa possessing land free for international agricultural investments. The realities are far more complex, with great diversity in terms of available resources, rights and use systems. Development options will have to manage the potentially conflicting objectives of conservation and development, and take into account the urgent reality of a young population searching for jobs.

• Misrepresentations and real uncertainties

Since the crisis in agricultural prices in the late 2000s, Africa has been involved in a highly publicised 'land rush'. There would be plenty of unallocated land available, just waiting to be exploited.

This view reflects the old thinking that has its origins in the colonial period, where land not considered to be formal private property was viewed, for example, as 'vacant and ownerless' or 'tribal areas' - designations that often translated into the incorporation of this land into the national public domain of the new states, with no recognition of prior rights. However, availability is a relative concept in an Africa characterised by legal systems which differ according to their judicial filiations, and a multiplicity of land tenure systems, marked by the overlapping of modes of appropriation and use.

Particularly, general analyses of the continent's land resources reveal a profound lack of knowledge about its actual and potential uses.

• "Full' and 'empty" with various meanings, an increasing pressure

Large aggregated figures and the uncertainty which surrounds them are of little use in understanding specific situations, which result from the characteristics of their population and the relationships between societies and their environment.

Africa is notable for the juxtaposition of 'full' and 'empty' areas, a legacy not only of geography but also of history, whether it be pre-colonial (areas depopulated through the slave trade, population growth in strong states) or colonial (intensification in mining or agricultural export areas and around the ports). Above all, there was the high population growth in the second half of the twentieth century. This growth is on going and affects not only the towns but also increases densification in highly populated areas and a gradual expansion in the urban sprawl.

In many areas, the pressure on natural resources is endangering the viability of the local agriculture and livestock systems. However, the shortage of resources is a relative concept. In fact, it also affects areas with historically high population densities (Rift Valley, the highlands of Ethiopia and Madagascar, some population centres in the Sudanese zone of West Africa), as well as less populated areas, where extensive agricultural systems are seeing their productivity fall as a result of demographic pressure, which shortens fallow periods. The case of the Mediterranean rim is critical, with strong pressure on aquifers and worsening water shortages leading to a general decline in production potential and an increased tendency to desertification.

• Conflicts in use and political issues

Apart from the heart of the Congo Basin – where there are issues concerning the preservation of biodiversity – there are very few places unaffected by rights, even in the large arid areas (Sahara).

Conflicts often materialise between opposing uses, legal norms and different actors. Taking the case of the hydraulic potential of large alluvial valleys, opposing interests exist from upstream and downstream, and between agricultural, energy production and urban use. Among agricultural users, conflicts occur between agricultural, livestock and fish farming practices, as well as among different (and increasingly competitive) agricultural models (newly developed areas, family farms, corporate farms and agro-industrial plantations). The numerous protected areas appear in many cases to be 'relics', damaged by farmers' clearances and livestock practices, and undermined by poaching. Tensions over land are particularly acute in areas with large differences in populations, where they become locked in political conflicts (Côte d'Ivoire, Great Lakes).

In such cases, large-scale transactions for agricultural land – information on which remains patchy despite significant international investigative efforts – can catalyse these tensions. The information available indicates that these land deals are mainly concentrated in a small number of states, some of which are most significantly affected by pressure on resources (Ethiopia, Madagascar, Sudan).

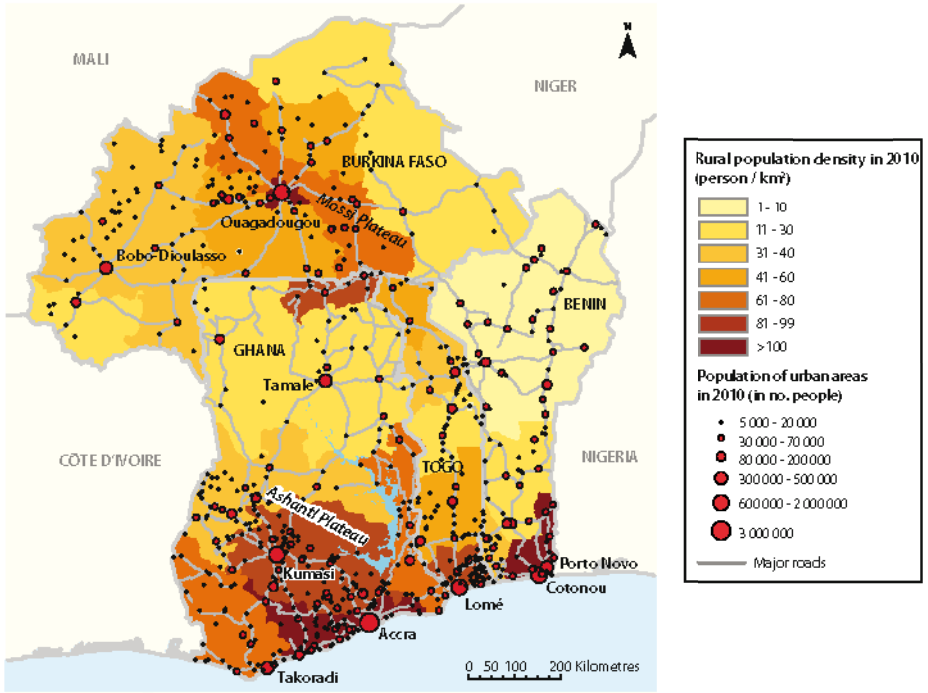
For the public authorities, the issues go beyond a simple matter of regional planning, and the options for resource use crystallise real development choices. There is no single recipe or a priori perfect dosage. However, the population trajectory imposes a common constraint on each state: they must meet the challenge of rural employment knowing that failure to do so could create an unmanageable social situation. Conservation can be compatible with pastoralism or village tourism, to ensure multi-functionality and therefore contribute to the resilience of rural systems, pioneer fronts can be accompanied by targeted infrastructure and support, and employ labour-intensive family farming; commercial agriculture and international investment may be favourable to employment, provided that local content clauses are negotiated regarding national employment, primary processing and outsourcing. It's the policy choices which will be crucial.

How much potential land?

The continent is vast (three billion hectares) – an area equivalent to that of Asia (excluding Russia) – and the land considered by the FAO to be agricultural (dedicated to annual and perennial crops, pastures and meadows) accounts for about 40% of the total. The remaining 60% includes forests (about 20%) and 'other land' (about 40%). Essentially, the latter comprises uncultivated areas (the percentage is particularly large because of the continent's desert and semi-desert regions) and residential areas. Only 20% of the land described as agricultural is actually cultivated for crops and the majority is therefore grazing land used – or usable – for breeding livestock. Some land currently covered by forests or used for extensive grazing could, in theory, be used for crops, subject to its agricultural potential, which is far from certain, and, above all, provided a negotiated agreement was reached with current users.

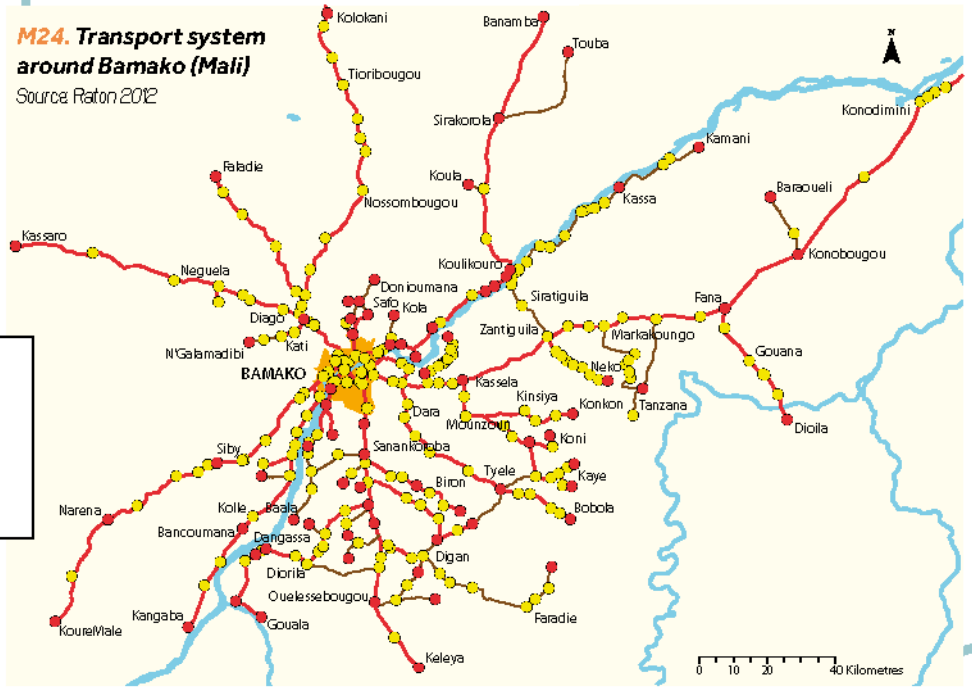
M23. Regional rural densities in four countries (Ghana, Burkina Faso, Benin, Togo)

Source: Countrystat, Africapolis (See note 7)



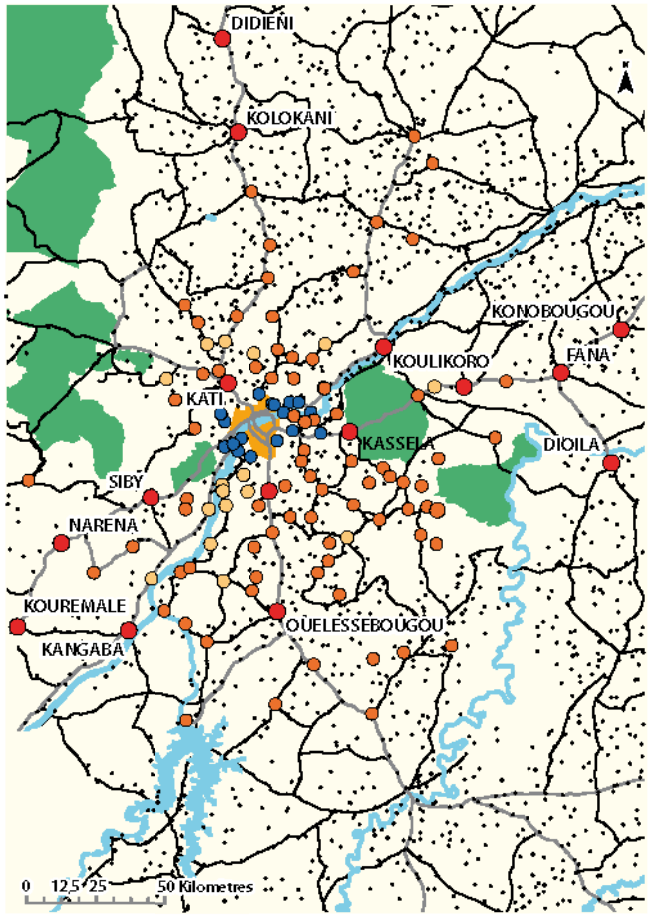
M24. Transport system around Bamako (Mali)

Source: Raton 2012



M25. Market places on the outskirts of Bamako (Mali)

Source: Raton 2012



Gwenaëlle Raton

Urban-rural linkages in West Africa: fostering densification

In West Africa, the emergence of market places, small towns and rural centres connected to the urban network shapes the pattern of daily life and tends to blur the distinction between town and country. These newly created territories are faced with the challenge of improving revenues and creating jobs. Their development requires targeted public policies.

• Rural densification promoting connection to cities

Africa is the only region in the world where the rural population will continue to grow in the coming decades. Within West Africa, the area comprising Ghana, Benin, Togo and Burkina Faso illustrates this growth and reveals a redistribution of the rural population following two processes: the densification and extension of the traditional centres of population and the densification of the rural population around urban centres.

Rural areas with low population densities are still found, such as in the north of Benin, in the south-west and north-east of Burkina Faso and in the mountains of Togo (<10 to 20 inhabitants/km²). But densification is consolidating or increasing in both traditionally populated areas – such as the Mossi plateau (60 to 80 inhabitants/km²) and the Ashanti plateau (80 to 100 inhabitants/km²) – as well as in areas where the availability of natural resources and development policies have favoured agricultural growth. This is the case, for example, of the Houet region in western Burkina Faso, which has seen an intensive wave of migration from the Mossi plateau, driven by a cotton pioneer front, and northern Ghana (Upper East). These areas of high rural population densities are therefore very diverse. These densities are also found in areas where there was the early development of plantation economies (such as the Ashanti region in Ghana), on the highly urbanised coast (the Accra/Takoradi/Kumasi – Lome – Cotonou/Porto Novo triangle) and in border areas and the outskirts of large cities (Ouagadougou).

These urban and rural dynamics first became entrenched with the development of agriculture for export, which had an urbanising effect: small towns developed from the late nineteenth century in the wake of cocoa and palm grove propagation in the southern regions. The cultivation of groundnut and cotton played a similar role in more northern regions in the second half of the twentieth century. These urban centres have performed the services of collecting, packing and sometimes primary processing of these products, in addition to trading functions with the rural communities – cash crops opened the way for the spread of the monetary economy and the consumption of imported products. Following this, the opportunities offered by urban markets favoured an increase in the rural population, faster than elsewhere, on the outskirts of urban areas and along the major trunk roads.

• The "cash food crop" revolution

After decades of development in agriculture for export, the growth of 'cash food crops' – or 'vivrier marchand' in the words of J.L. Chaléard – marked a silent revolution: the widespread adoption by farmers of a strategy by which food crops (cereals, fresh produce, fruits, seeds, etc.) are traded on the domestic African markets (local or regional). This dynamic, driven by urban growth, intensified in the 1980s in response to the falling prices which hit export crops.

The rise of the cash food crop system developed and diversified trade between complementary ecological zones, which had been overshadowed by the progress in export agriculture. It is based on hierarchical trading systems connecting rural producing areas and consuming cities, based on a dense network of weekly rural markets. On the outskirts of Bamako, for example, the development of food production began in the 1960s with the strengthening of the functions of the new capital; the progressive intensification of trade between the city and its outskirts encouraged the simultaneous creation of public transport and commercial networks, which were further consolidated in the 1980s. Within a radius of 150km, all localities and their producers benefit either daily or weekly from the opportunities offered by their proximity to the urban market.

• New lifestyles, new territoriality and new challenges for policy

In West Africa, the densification in the number of small towns and the intensification of the relations between town and country, has led to a blurring in the differentiation between urban and rural areas. The mixing of individual rural and urban strategies has accompanied the urbanisation of Africa. Many city dwellers are involved in agriculture and animal husbandry, either in town or in peripheral urban areas. Equally, many rural dwellers are employed – seasonally or even daily – in the city.

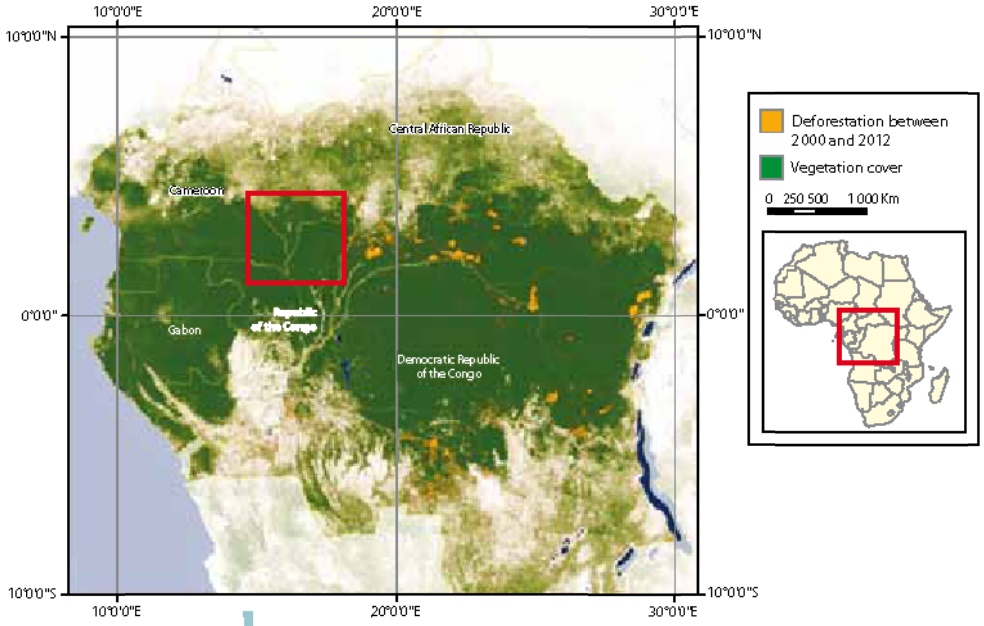
This process is reinforced by the rapid adoption of global innovations which promote the convergence of lifestyles: the rapid spread of mobile telephony and advances in rural radio speed the diffusion of information and give better access to urban opportunities; low-cost Chinese motorcycles and mini-buses increase rural mobility; progress (though still uneven) in rural electrification makes television access more widespread and accelerates the homogenisation of consumption patterns.

However, in itself, this new territoriality is not synonymous with development as it very often coexists with high poverty rates. The integration of new areas is dynamic but remains essentially informal in nature and relies on creative ingenuity, with a distinct lack of infrastructure and services. The consolidation of new territories, shaped by the practices and initiatives of their residents, requires appropriate public policies, strengthening the urban functions of small towns which make up the missing link in African urbanisation.

Despite progress in decentralisation, cities still capture most of the resources and the promotion of the corridor model – concentrating facilities and activities – can further strengthen a 'tunnel' effect,resulting in increased neglect of the intermediate territorial fabric. It is at this level that the densification process already underway can be stimulated through targeted investments and support to encourage business development and employment.

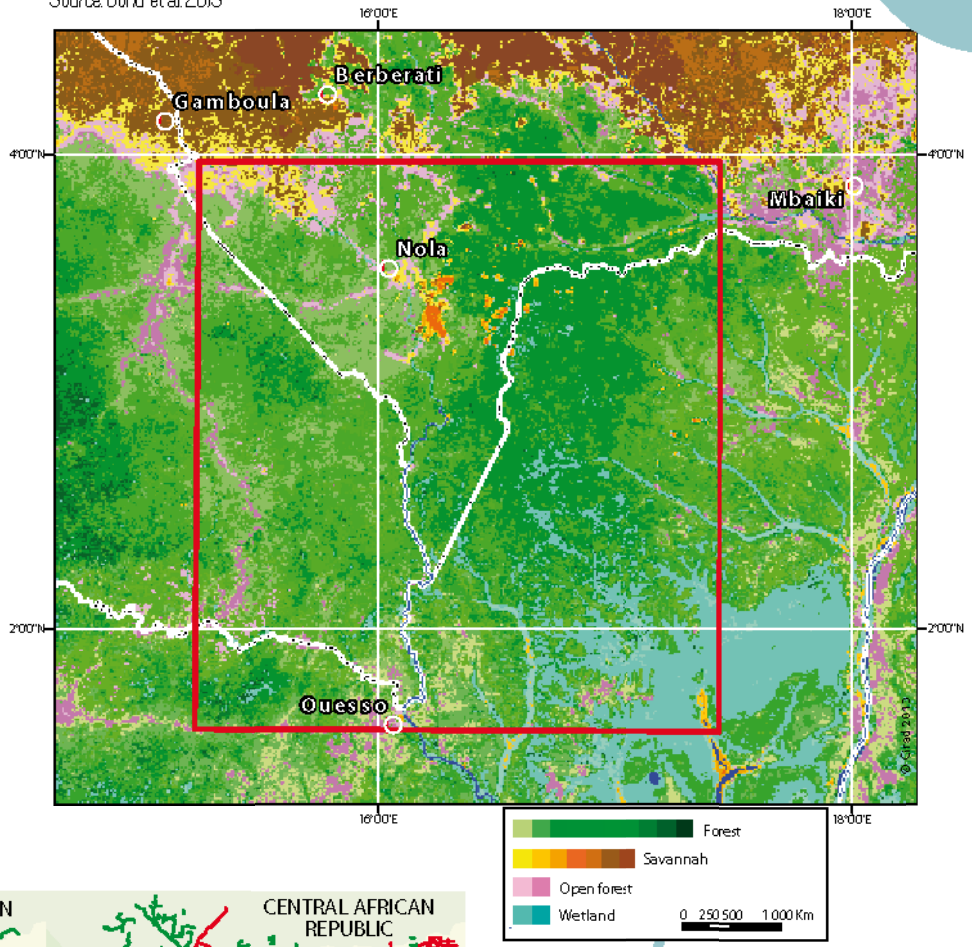
M26. Deforestation in the Congo Basin (2000-2012)

Source: OSFAC 2010



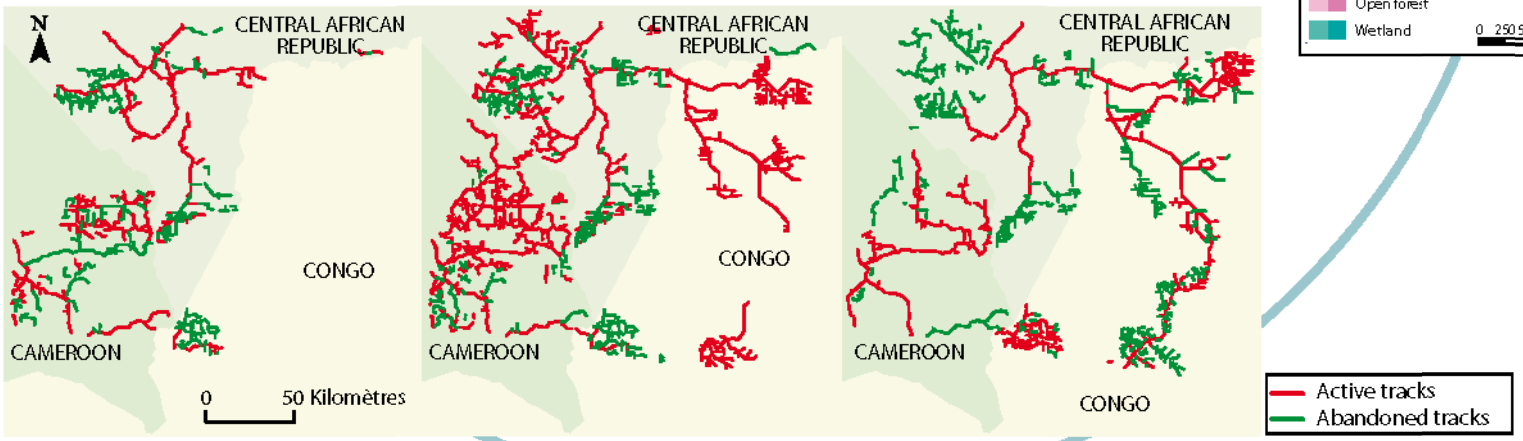
M27. Vegetation in the Cameroon-CAR-Congo border area

Source: Gond et al. 2013



M28. Evolution of the forest track network in the Cameroon-CAR-Congo border area (1992-2012)

Source: Kleinschroth et al. 2013



Valéry Gond

The Congo Basin: low rates of deforestation but multiple threats

Taken as a whole, the forest block in Central Africa is the second largest tropical rainforest in the world. Over recent decades, it has undergone dispersed deforestation, mainly due to traditional activities: itinerant slash and burn agriculture, harvesting of fuelwood, and timber production. Today, the most serious threat is the fragmentation of vegetation cover by roads, in addition to the absence of any regulation in conflict zones.

• Unobtrusive deforestation and diffused damage

Spread over 1.6 million square kilometres, the forested area of the Congo Basin covers six countries (DRC, Congo, Gabon, Cameroon, Equatorial Guinea, Central African Republic). Reliably measuring African deforestation is not straightforward and provides unexpected results. Despite satellite data, it is difficult to translate the loss of forest cover into percentages. Given the low population density, itinerant slash and burn agriculture produces rather unobtrusive deforestation. The scattered nature and low impact of slashing on the forest trees results in deforestation rates which are the lowest in the world for tropical forests. This rate actually decreased, falling to 0.10% per year for the decade 2000 to 2010, compared to 0.16% per year for the previous decade.

Beyond deforestation, forest degradation is an issue in Central Africa. Indeed, the production of fuelwood and timber extraction reduces the quality of forest formations (loss of biodiversity, mixed types of forest stand). Currently we have little way of assessing these impacts. However, remote sensing can measure several parameters of this degradation without the need for traditional investigative methods, which are not suited to such large forested areas.

• Today's principal targets: fuelwood and timber

In countries notable for their poverty, abundant fuelwood resources and erratic environmental policies, wood resources account for the bulk of domestic energy consumption. And fuelwood accounts for the majority of wood extracted from the forest (80%).

Operating informally, the extraction of fuelwood occurs around residential areas and extends in a circular or spoked fashion depending on the size of the town, around cities and along roads. The areas involved are complex environments, which could be described as agro-forestry systems, combining the collection of fuelwood, the growing of food crops and small plantations under the forest canopy (particularly cocoa). It is in these situations that the collection of fuelwood is strongest.

The extraction of timber accounts for only 20% of the total extraction, of which only half is carried out by forestry companies working to modern standards. It is conducted through the development of a hierarchical road network, organised according to the location of the valuable timber resources. Monitoring these networks allows the impact of the sector to be assessed. In the Central African forest, the operating pressure is only two or three trees per hectare, which is modest. However, the introduction of access tracks penetrating into the forest increases the forest's vulnerability because operators often search for trees in undisturbed forests, where their equipment causes ecological changes (particularly the dissemination of pioneer plants in ancient forests). These access tracks are also the origin of the major indirect impact on biodiversity, as they rapidly raise commercial hunting pressures on wildlife.

• Future threats and development challenges

In the near future, the threats are primarily related to the increase in harvesting of fuelwood. Indeed, population growth - particularly rapid in a Central Africa which is quickly making up ground on its historical under-population – will have an impact on energy demands. Pressure on the forest will extend to the outskirts of built-up areas, as is already the case in the eastern part of the forest near the large settlements in the Great Lakes region and around major cities such as Kinshasa (DRC).

There is also a threat of an industrial nature affecting the forests of Central Africa, linked with the proliferation of mining projects and agro-industrial plantations, including those for palm oil. The communication infrastructures and settlements which accompany these projects will inevitably open up the forest and cause additional local pressures, affecting once again the quality of the resource.

Finally, climate change caused by global warming will lead, according to prediction models, to a decrease in rainfall and a lengthening of the dry season. The forest will bear the consequences – though the degree is difficult to forecast – but this would result in ecological deterioration of ancient forests and a depletion of species in those areas already exploited.

The future of the forest basin depends on the management of these multiple uses and risks according to local, national or international interests. Public policy should arbitrate between them, in order to reconcile the improvement of people's living conditions, economic growth and the preservation of common goods.

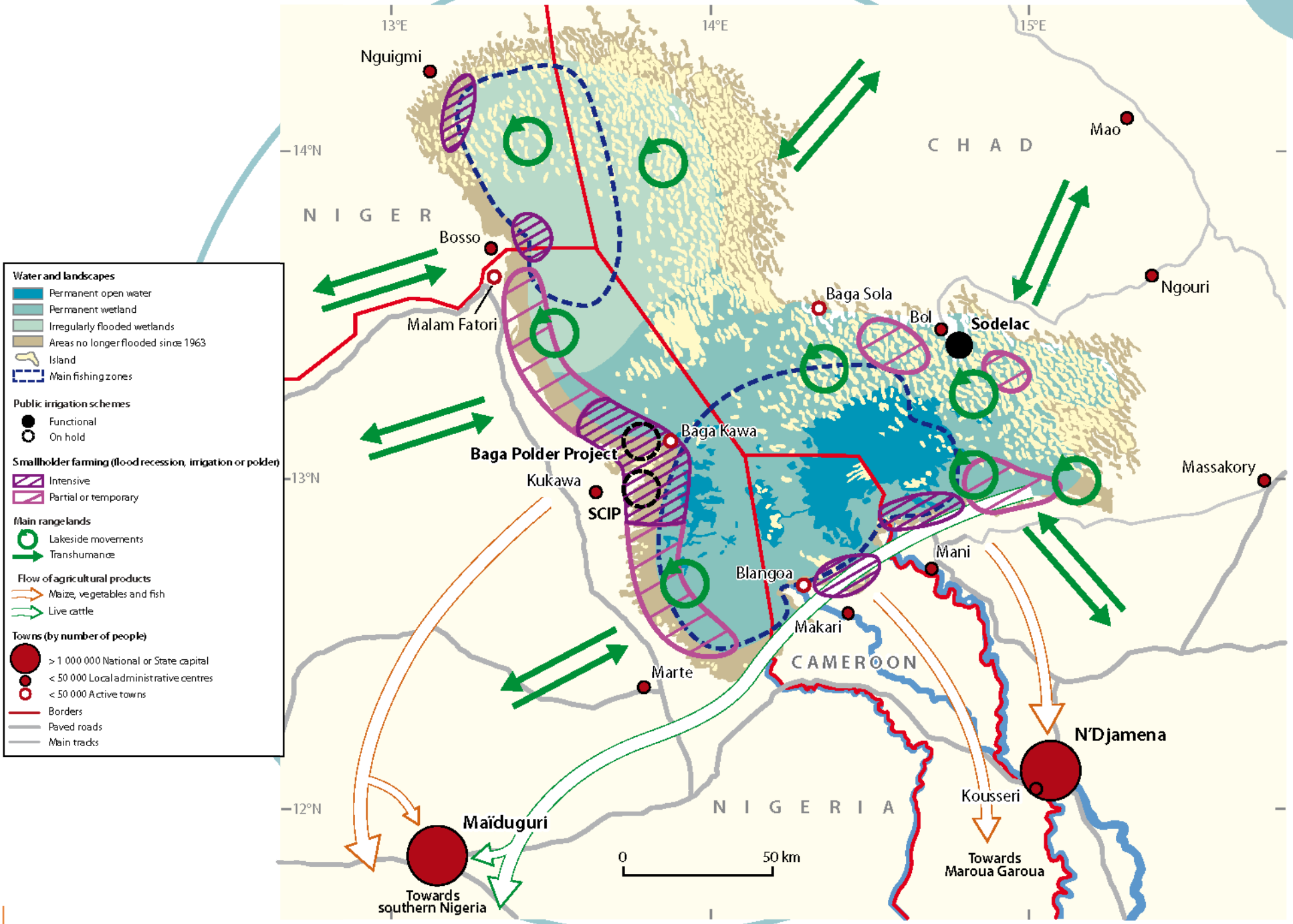
Man versus nature: a shifting balance of power

Using satellites to measure the photosynthetic activity of the vegetative surface, we can measure both the natural vegetation types and their evolution relative to human pressure. In map 27 the different shades of green highlight forest covers with differing structures and floristic compositions. In blue we find swampy forests, in orange are the savannahs found in forestry environments, in brown the savannahs of the Guinea-Sudanese area and, finally, in pink very open forests which have been the subject of most wood extraction.

Analysing the evolution of the network of forest tracks allows us to better understand the consequences of human activity. Map 28, compiled from Landsat satellite data (30m spatial resolution), highlights the network of 'active' tracks (in red) at intervals of 10 years. It expands and contracts in accordance with forestry operations, and the abandoned tracks (in green) disappear, sometimes gradually returning to a forest state.

M29. Dynamics of different uses in the Lake Chad Basin

author, after Magrin et al. 2010, Magrin and Raimond (dir.) 2012 (see note 8)



Géraud Magrin

Lake Chad's resources: intervention or adaptation?

Given the context of rapid population growth, the potential offered by the water and fertile soils of Lake Chad is both real and under pressure. While it is true that the lake is exposed to climatic uncertainty, it is especially subject to the governance challenges presented by an area which is split between four states and also attracts the attention of the international community. In the current context notable for the revival of developmental projects, critical decisions need to be taken about the vocation of the lake and the forms of intervention which should be prioritised.

• An area with strong potential

The case of Lake Chad brings together a number of the development challenges and wetland management issues found in dry-zone Africa. It is an oasis in the heart of the Sahel. For many years, the islands and lake shores (around 30,000km2) were sparsely populated. Fishing and agricultural irrigation schemes between 1950 and 1970 saw a first wave of migrants. From the drought of the 1970-1980 period, its resources in terms of water, fish and land – recession cultivation lands used for agriculture and livestock – have attracted populations originating from the immediate hinterland or much further afield: the lake has become a centre of cosmopolitan convergence. Irrigated agriculture was quickly in crisis because of falling water levels and malfunctioning large-scale irrigation systems. However, a very dynamic family agriculture developed (on newly exposed soils or using small irrigation systems) on the southern shores of the lake, which is better connected to urban markets; fishing has been maintained; livestock are grazed on the rich pasture available in the dry season thanks to the seasonal shrinking of the lake, with various degrees of transhumance whose scale varies according to the groups of herders. This area now plays a major role in supplying the regional cities, N'Djamena and Maiduguri, with fish, beef, maize and vegetables.

• Vulnerability and uncertainty

Nevertheless, the future of Lake Chad is still uncertain. Droughts in the years 1970-1980 reactivated fears, which go back many years, that the lake may disappear. Its surface area shrank from 23,000km² in 1963 to 2,500km² of open water in the late 1980s, before increasing slightly because of recent wetter years. Variability is inherent in the history of the lake. It is fed by the Chari-Logone system, which has its source in the Sudanese region, a sub-humid climate, and there is little reason to believe this will stop in the short term. Indeed, a sudden drought would signal a climatic catastrophe across the whole of West Africa.

While climate models cannot yet predict the consequences of global warming on the Chad basin, it is unlikely that the lake will disappear in the short term due to natural causes. Rather, it is the responses provided to the challenge of population growth and the pressure this creates on natural resources which will decide the lake's future. Some two million people live on the banks of the lake itself. Pressure on the best land, which is more marked on the southern shores, causes conflicts over its use (agriculture/livestock) and between groups, while increasing social inequalities. For the time being, the conflicts remain regulated as best they can be by customary authorities. The lake can still accommodate growth in the rural population, especially on its northern shores, if road connections to the region's urban areas improve. But not to an unlimited degree.

Meanwhile, the population of the basin, currently around 30 million spread over 1 million km² and five countries, half in northern Nigeria, is also expected to grow significantly (doubling in 20 years). Given the current agricultural systems, much of the exposed land is already close to saturation point. Exploiting the plains, especially the Chari and Logone, which until now have remained largely uncultivated, can contribute to addressing food security, provided that water extraction does not affect the annual flood which feeds Lake Chad and water quality remains unaltered. Integrated management at the basin scale is required.

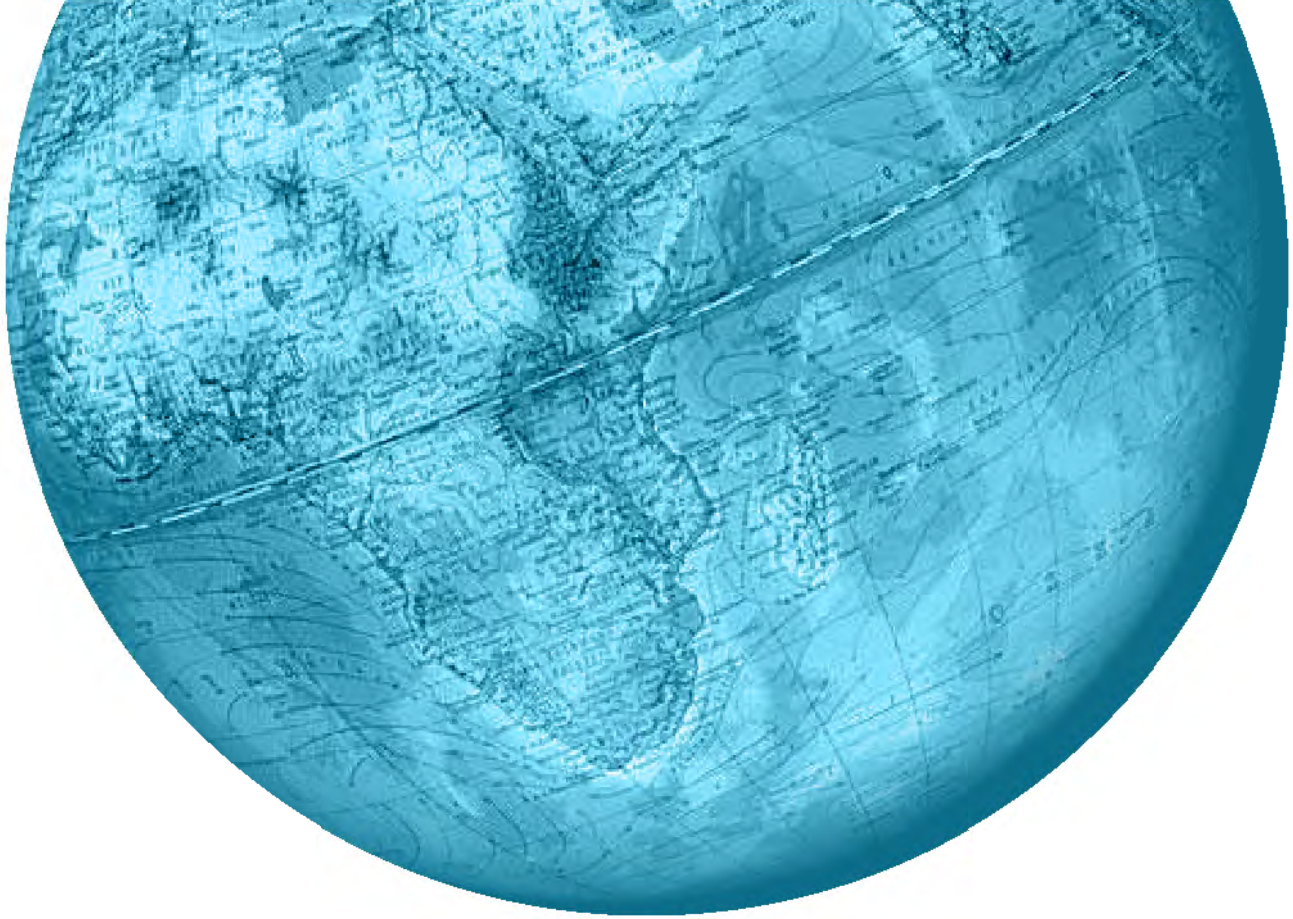
• Choices and governance issues

The increasing pressure on water and land resources means choices have to be made. For Lake Chad, until what point will the preservation of biodiversity be compatible with economic development? Should stakeholders define a unique vocation for the lake based on its comparative advantages (a production area for animal protein – fish or beef – or cereals?), or should they optimise its multi-functionality which has, until now, allowed it to prosper?

To exploit this strong potential, should planning follow a logic strongly driven by the desire to protect the lake against variations (for example, by transferring water from the Ubangi to regulate the level of the lake), or call on adaptation of local communities' practices in an environment which has always been notable for its variability?

Behind these choices loom opposing agricultural models, with important implications for employment: large developments may make it possible to introduce mechanisation and, subsequently, a major increase in production, but they raise the risk of reducing employment. Indeed, promoting family farming could also meet the demand for food, while at the same time satisfying the crucial need for social stability. It is also more conducive to a genuine diversification in rural activities.

It is the mandate of the Lake Chad Basin Commission (LCBC) to ensure member states take on board these issues and respond in an integrated manner, articulating better than in the past local participation, national ambitions and international support.



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NOTES

Please note:

The statistical data presented in this document and its accompanying maps is to a very large extent from the period before the creation of South Sudan. Consequently, when the values applied to the territory of South Sudan are those of Sudan before the partition, the symbol '//' has been marked on the territorial boundary. The same is true for the data presented in spread 5, which corresponds to the former People's Democratic Republic of Ethiopia and is applied identically to Ethiopia and Eritrea.

Note 1: Data is from the Africapolis programme's database. Information about North and Southern Africa is not yet available. See:
Denis E., Moriconi-Ebrard F., 2012, *Africapolis: Urbanization Trends in West Africa*. AFD
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Note 2: The profile types for structural change were constructed by analysing changes in each of the 53 African countries (excluding South Sudan and Western Sahara), crossing the share of agriculture in GDP (source WDI) and in the working population (source FAOSTAT). The typology was performed using ascending hierarchical classification. The curves, which represent changes in the percentage value of each indicator over the period 1961-2010, were then produced by calculating the average for countries sharing the same profile type.

Note 3: Food supply is calculated from data on production, trade (imports - exports) and use (food and non-food).

Note 4: A composite index calculated by IFPRI based on the prevalence of undernourishment in the total population, the prevalence of underweight and mortality rate of children under 5 years (baseline data for 2012 index= 2005-2010).

Note 5: Household expenditure survey conducted for the calculation of the Harmonised Index of Consumer Prices (HICP).

Note 6: For countries where information is not available, no large-scale land transactions were identified or transactions could not be verified. See:
Anseeuw W., Boche M., Breu T., Giger M., Lay J., Messerli P., Nolte K., 2012, *Transnational land deals for agriculture in the Global South*. Analytical Report based on the Land Matrix Database. Bern –Montpellier – Hamburg: CDE – CIRAD - GIGA, Research report.

Note 7: The map of rural densities uses two databases: CountryStat and Africapolis. To calculate the rural density of these areas in 2009, each of the Africapolis agglomerations was attached to its regional administrative entity and then the aggregated population of the agglomerations was subtracted from the total population (CountryStat) to obtain the rural population, which is reported by rural areas calculated using the same sources.

Note 8: See also the ongoing work of the expert panel on Lake Chad:
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CIRAD is a French research centre that works in partnership with countries of the South to generate and transfer new knowledge in order to support agricultural development and to contribute to the debate on the main global issues surrounding agriculture, food and rural territories. CIRAD has a global network of partners and regional offices, from which it works in cooperation with more than 90 countries.

AN EMERGING RURAL WORLD

AN OVERVIEW OF RURAL CHANGE IN AFRICA

This atlas proposes a series of different perspectives on the manifold changes characterising rural Africa. Based on an examination of the major demographic, spatial and economic trends at the continental level, illustrated by several regional examples, its aim is to inform the debate on the key issues of territorial development and to contribute to the work of the NEPAD *Rural Futures* programme.

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